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SECOND ANNUAL
MOUNTAIN STATES REGION
ECONOMIC OUTLOOK CONFERENCE

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Bureau of Business and Economic Research
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University of New Mexico

March 13, 1984
Hyatt Regency Hotel
Phoenix, Arizona

SECOND ANNUAL
MOUNTAIN STATES REGION ECONOMIC OUTLOOK CONFERENCE
March 13, 1984

AGENDA

8:00-8:30 Registration, Coffee and Danish

8:30-8:45 Welcome and Setting the Agenda

Brian McDonald
Bureau of Business and Economic Research
University of New Mexico

8:45-9:15 The 1983-84 National Economy: Performance, Problems and Prospects

Donald H. Straszheim
Wharton Econometrics

9:15-9:45 The Mountain States Region Outlook: National Perspective

John Del Roccili
Wharton Econometrics

9:45-12:00 The Regional Outlook State by State

ARIZONA: Marshall J. Vest
College of Business and Public Administration
University of Arizona

COLORADO: Michael Greenwood
Department of Economics
University of Colorado

UTAH: Douglas Macdonald
Utah State Tax Commission

NEW MEXICO: Brian McDonald
Bureau of Business and Economic Research
University of New Mexico

12:00-1:00	Luncheon	
1:00-3:00	The Regional Outlook State by State (continued)	
	NEVADA:	Thomas Cargill Department of Economics University of Nevada-Reno
	WYOMING:	Shelby Gerking Institute for Policy Research University of Wyoming
	IDAHO:	John Church Idaho Power Company
	MONTANA:	Paul Polzin Bureau of Business and Economic Research University of Montana
3:00-3:45	Reconciling the Regional Forecasts Summary of the Day Open Discussion	
—	Thayne Robson Bureau of Economic and Business Research University of Utah	
3:45	Adjourn	

ABOUT THE SPEAKERS

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ARIZONA

THE ECONOMIC OUTLOOK
FOR
ARIZONA

presented at the

Mountain State Region Economic Outlook Conference
Phoenix, Arizona
March 13, 1984

presented by

Marshall J. Vest

Division of Economic and Business Research
College of Business and Public Administration
The University of Arizona

1983 in Review

Overview

The economy was a pleasant surprise in 1983, recovering much more rapidly than most economists expected. Whereas one year ago it appeared there would be a sub-par recovery, the economy's performance was in fact about average, closely tracking the average of the previous eight post-war recoveries. Many measures of economic performance regained their previous peaks and are now setting new all-time highs with each passing month. For example, by last year's third quarter, real gross national product (GNP) had recovered to its previous peak established in the third quarter of 1981. Industrial production (which accounts for about 40 percent of the nation's economy) recently surpassed its previous high established in July 1981. In Arizona, as 1983 came to a close, record levels of employment were being established each month in trade, services, finance, insurance, real estate, and government, as well as for total wage and salary employment. As growth continues into 1984, the economy will continue its transition from a recovery phase to one of expansion.

One of the biggest success stories of 1983 was progress against inflation. The consumer price index increased only 3.8 percent, the smallest increase since 1967 and a dramatic improvement over 1979 when prices jumped 13.3 percent. Because of low inflation and high unemployment, labor costs also slowed significantly. Wage increases for the full year 1983 were less than five percent -- the smallest rise since the mid-1960s.

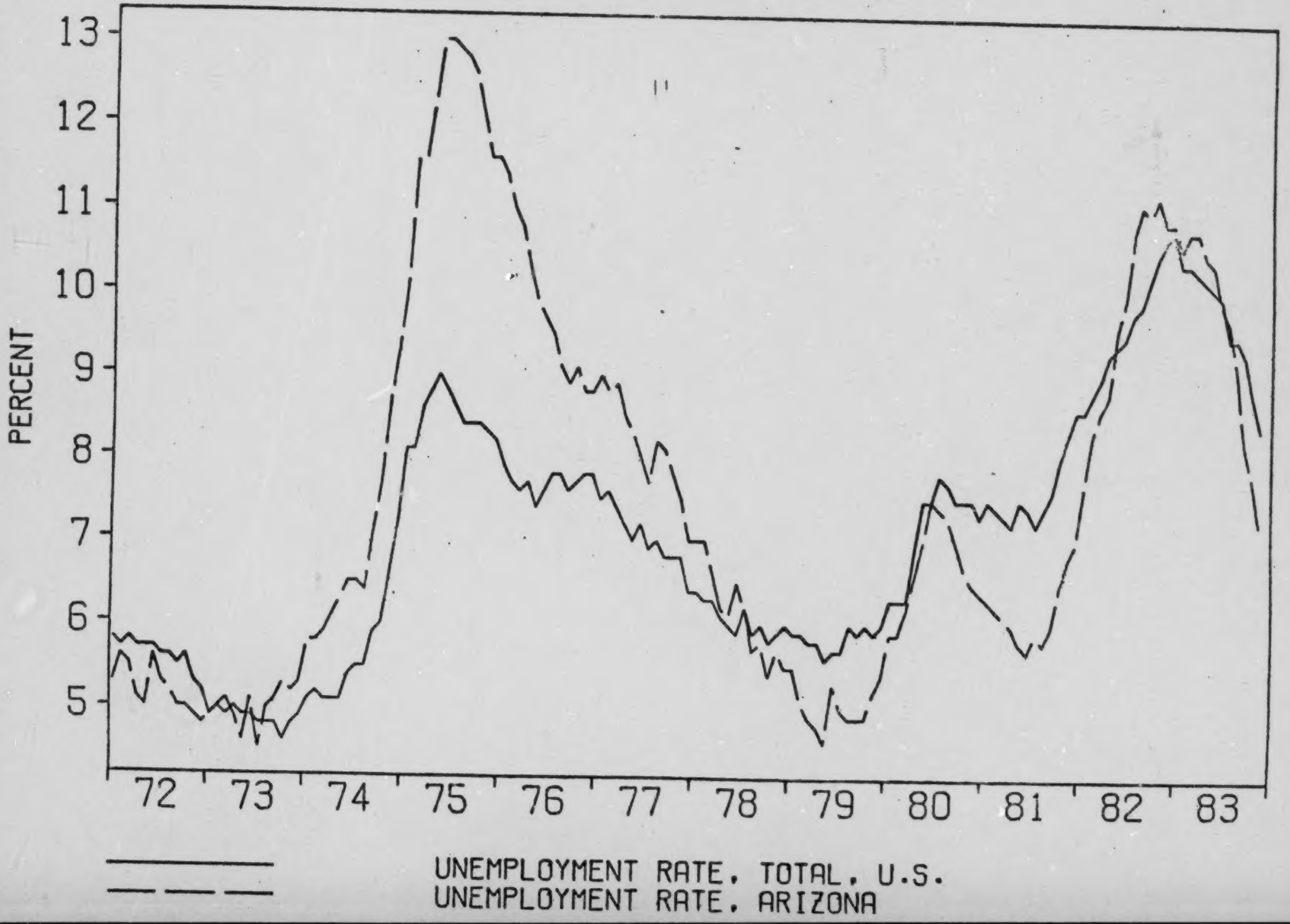
1983 also was marked by a significant improvement in the labor market, as shown in Figure 1. While the nationwide unemployment rate fell from 10.8 percent at the end of 1982 to 8.2 percent one year later, Arizona's rate fell even faster -- from 10.9 to 6.5 percent, the largest annual decline ever recorded. Relatively strong employment gains coupled with modest growth in the labor force accounted for the sharp drop. Over the course of the year total employment in Arizona increased by over 103,000, a gain of more than 8.5 percent. The labor force grew by less than half that amount.

Three major labor disputes -- in the mining, communications and transportation industries -- tempered the labor market improvement, however. Phelps Dodge, the nation's second largest (and Arizona's largest) copper producer, was struck in July by a labor dispute involving major economic issues. After losing nearly $78 million in the final 18 months of the previous three-year contract, Phelps Dodge sought to suspend automatic cost-of-living increases and roll back benefits. When 1400 workers walked off the job, Phelps Dodge continued operations, hiring new workers. According to company officials, employment was back to normal at year-end 1983, making strikers' continued efforts somewhat dubious. In another labor dispute last summer, communications workers struck against AT&T. The strike of several weeks affected nearly 8,200 workers in Arizona. In November, workers struck Phoenix-based Greyhound Corporation but agreed to return by accepting a 7.8 percent reduction in wages and other concessions. Just over 200 Arizona workers were involved.

Last year's recovery was also marred by flooding across Arizona. Spring flooding along the Colorado River, resulting from an unusually heavy snow melt, disrupted retailing and tourism in Arizona-California border communities. In October, flooding from heavy rains did considerable damage to property, road, bridges, livestock and crops in southern Arizona. Although the construction industry received a boost from the necessary rebuilding of damaged property, agriculture suffered heavy losses. Damage from the flooding was estimated at nearly one-half billion dollars.

FIGURE 1

UNEMPLOYMENT RATE
ARIZONA VS U.S.



Leading the 1983 recovery were construction activity and consumer spending. The number of housing units authorized by building permits set an all-time record: the 63,904 units permitted eclipsed the previous high of 60,437 set in 1978. During the year, more than 11,700 construction workers found jobs. Residential construction recovered quickly as mortgage rates fell from a mid-1982 level in excess of 16 percent to less than 13 percent. Credit flows into mortgages were also aided by the rapid development of secondary mortgage markets and by large inflows into savings and loan institutions, resulting from newly authorized, competitive, deposit accounts.

Consumers sharply increased spending in last year's second quarter as the strength of the recovery became known and as consumer confidence soared to heights not seen since 1972. According to retailers, Christmas spending was the best in more than a decade, with sales running 20 to 30 percent higher than during the Christmas season of 1982. For the year as a whole, retail sales in Arizona (which includes restaurant and bar, food, and gasoline sales) were up almost nine percent above 1982.

Arizona's manufacturing industry added 8700 workers during 1983. Sectors related to construction (forest products, lumber and wood products and stone, clay and glass) began increasing in late 1982, and were joined in early 1983 by the semiconductor and computer groups. Arizona's aerospace industry, having strong ties to federal government contracts, remained strong throughout the recession.

Deregulation in the financial services industry caused several changes during 1983. Mergers reduced state savings and loan institutions to six state and two federally-chartered institutions, down from 17 at the beginning of 1981. However, applications were made during the year for six new saving and loans. Two of Arizona's largest, First Federal Savings and Home

Federal, became publicly owned, raising over $110 million from initial stock offerings. In 1983, the combined net worth of Arizona's thrift institutions increased 80 percent to almost $400 million. Nine new banks opened (seven state and two nationally-chartered) and at least six more applications for new charters were pending at year end. Employment increased by 1,800 during 1983 in the finance, insurance and real estate industries.

Review of Employment Situation

Since the recession bottomed out near the end of 1982, a year of deep recession, comparison with 1983, a year of steady recovery, reveals some interesting contrasts and similarities among the industries affected. The total civilian labor force in 1983 averaged 1,350,900, accounting for a 2.1 percent increase over that for the previous year (see Table 1). When compared to a population increase of 2.5 percent over the same period, this would indicate a slight decrease in the proportion of persons participating in the work force. However, employment increased by 2.8 percent during the same period. The rapid rate of expansion during the second half of the year can easily be seen by comparing the December figures with the annual average.

Wage and salary employment added a net increase of almost 16,000 jobs from 1982 to 1983 for an increase of 1.5 percent. At year-end the level stood at 1,088,000, a new high. Analysis of performance among the industries, however, reveals an uneven recovery period. In some sectors these differences are even more pronounced when comparing the two metropolitan areas with each other and with the state as a whole. Clearly, the most spectacular gains were made in construction, particularly in the more labor intensive sector of residential building. Employment in the industry

Table 1

Arizona Population, Labor Force and Employment

1982 - 1983

	Annual Averages		Percent Change	December 1983
	1982	1983		
Population (as of July 1)	2,865,500	2,937,300	+ 2.5	2,979,500
Civilian Labor Force	1,323,000	1,350,900	+ 2.1	1,399,700
Employment	1,192,000	1,225,800	+ 2.8	1,311,700
Agriculture	20,000	19,600	- 2.0	21,200
Non-agriculture	1,172,000	1,206,200	+ 2.9	1,290,500
Unemployment	131,000	125,000	- 4.9	88,000
Rate	(9.9%)	(9.3%)	--	(6.5%)
Total Wage and Salary Employment	1,029,300	1,045,000	+ 1.5	1,088,000
Manufacturing	153,500	152,600	- 0.6	157,600
Durable Goods	119,200	118,300	- 0.8	123,000
Non-Durable Goods	34,300	34,200	- 0.3	34,600
Mining and Quarrying	18,300	15,500	- 15.3	15,600
Construction	64,100	72,400	+ 12.9	76,900
Transportation, Communications and Public Utilities	56,500	55,400	- 1.9	57,100
Trade	254,200	257,000	+ 1.1	268.900
Wholesale Trade	51,000	51,400	+ 0.8	53,200
Retail Trade	203,200	205,600	+ 1.2	215,700
Finance, Insurance and Real Estate	61,700	62,700	+ 1.6	63,700
Services and Miscellaneous	221,000	226,800	+ 2.6	234,100
Government	199,900	202,800	+ 1.5	214,100
Federal	37,600	38,500	+ 2.4	39,100
State and Local	162,300	164,300	+ 1.2	175,000

Note: Totals may not sum due to rounding.

Source: Arizona Department of Economic Security.

increased 12.9 percent and the level of employment approached almost 77,000 workers at year-end. The majority of these gains have occurred in the two metropolitan areas, with Tucson posting a gain of 20.5 percent and Phoenix, 15.4 percent.

Much farther behind was the services industry which added almost 6,000 jobs for a 2.6 percent increase in employment. Virtually all of these were located in the two metropolitan areas with a 3.5 percent increase. On a relative basis, federal government employment almost matched the performance in services with a 2.4 percent gain, however, with a much smaller base this increase accounted for only 900 new jobs.

A number of industries posted employment gains in the range of one to two percent. Trade added 2,800 new jobs (400 in wholesale and 2,400 in retail). Finance, insurance and real estate added 1,000 new positions while state and local government added 2,000 workers. On a geographical basis, the trade sector performed better in the Phoenix metropolitan area and the finance, insurance and real estate sector performed better in the Tucson metropolitan area.

These additions obviously sum to more than the 16,000 net additions to wages and salary employment. The answer to this apparent inconsistency is that three industries have not yet recovered from the effects of the recession, although two of them are on the way back. Specifically, the manufacturing industry lost 900 jobs in 1983 when compared with the previous year, a net loss of 0.6 percent. Almost all of these jobs were in the durable goods sector. Here the performance between the two metropolitan areas were diametrically opposed. While the Tucson metropolitan area added 700 jobs, the Phoenix metropolitan area lost 1,500. The average level of manufacturing employment in the Phoenix area for 1983 is estimated at 109,600 for a 1.4 percent loss. In Tucson, the level is 26,300 for a 2.7 percent gain.

Statewide, the level of employment in manufacturing at year-end was 157,600 indicating a late surge of activity.

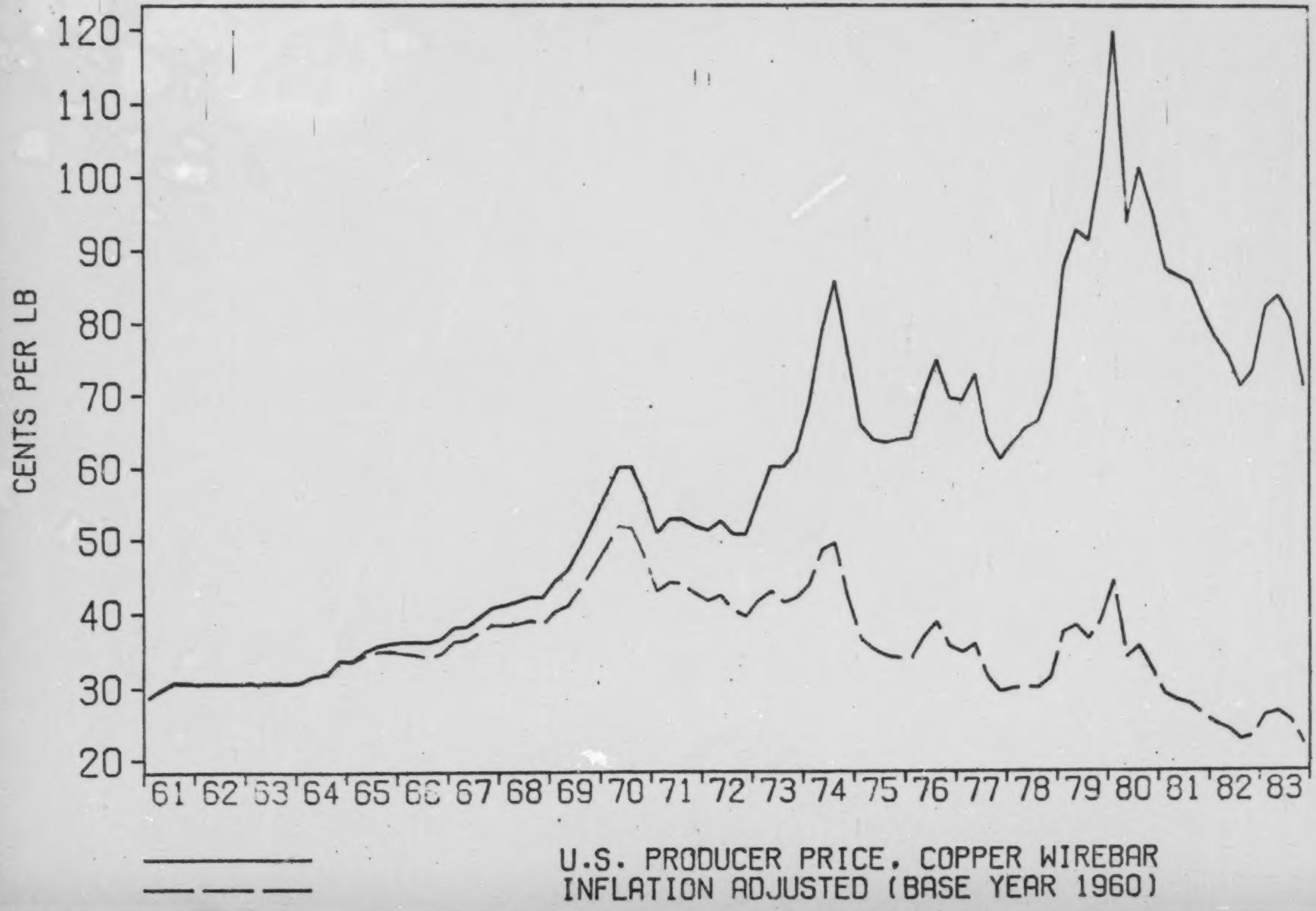
Average employment in transportation, communications and public utilities was adversely affected in mid-summer by strikes which involved some 8,200 workers. As a result, the industry posted a year-over-year decline of 1.9 percent. This also represents a loss of 900 jobs and on a relative basis was more severe in the Tucson area (-4.4 percent) than in the Phoenix area (-1.7 percent). However, the industry also showed healthy signs of revival at year-end as employment stood at 57,100, substantially above the average of 55,400 for the year.

The chronic disappointment has been the mining industry. Employment has been wracked by lay-offs and mine closures during the recession and strikes during a general recovery which, for all intents and purposes, has by-passed the mining sector. At this point, a description of the industry is in order. It is apparent that copper is the mainstay of the Arizona minerals industry. The state continues to increase its share of all copper mined in the United States currently estimated at 67 percent. Within Arizona, however, copper has lost some of its dominance. Whereas copper consistently accounted for 85 to 90 percent of the value of all non-fuel minerals activity in Arizona during the 1960s and early 1970s, that share fell below 74 percent in 1982.

The copper mining industry operated at only 60 percent of capacity during 1983. Production in Arizona was down another ten percent from 1982's depressed level, making 1983 the worst in 50 years. Prices reached almost 83 cents per pound in May of last year and then declined to below 67 cents a pound in November (see Figure 2). At year-end 1983, it rested near 70 cents, far below the estimated cost of production of nearly $1.00. Prices are low because of the huge inventories that continued to build,

FIGURE 2

U.S. DOMESTIC COPPER PRICES



even in the face of production cutbacks. As Figure 3 shows, U.S. inventories account for most of the increase.

Arizona also is a leading producer of molybdenum, silver and gold, ranking among the top five states in output for each of those ores. Since substantial portions of these metals (and others such as lead and zinc) are recovered as by-products of copper mining operations, any curtailment in copper production also affects these minerals. Indeed, "co-products" may be a better term since there have been instances when the price of gold or molybdenum was sufficiently high that the "copper" mines were able to produce even though the copper price had fallen below the break-even point. The mines are, in reality, multi-product operations: the overall price of the mix of ores determines the level of production and, furthermore, the mix varies from mine to mine.

It is with this scenario as background that the mining industry has faced chronic low prices for copper, and lately, its co-products as well. The result has been substantially lower levels of employment within the industry. Average employment for 1983 was 15,500 a decrease of 2,800 jobs or 15.3 percent from the average level in 1982. At year-end the employment level remained unchanged. Pima County, the metropolitan area in which Tucson is located, is severely affected by the downturn. Not only has it been faced with the loss of 1,200 jobs over the same period as mentioned above, but they are relatively high-paying jobs averaging over $500 per week.

Review of Personal Income

Total Arizona personal income for 1983 is estimated at $31.2 billion, a 7.4 percent increase above the level for 1982, as shown in Table 2. Slightly more than two-thirds of total personal income is provided by labor

URE 3

STOCKS OF REFINED COPPER
U.S. VS WORLD PRODUCTION

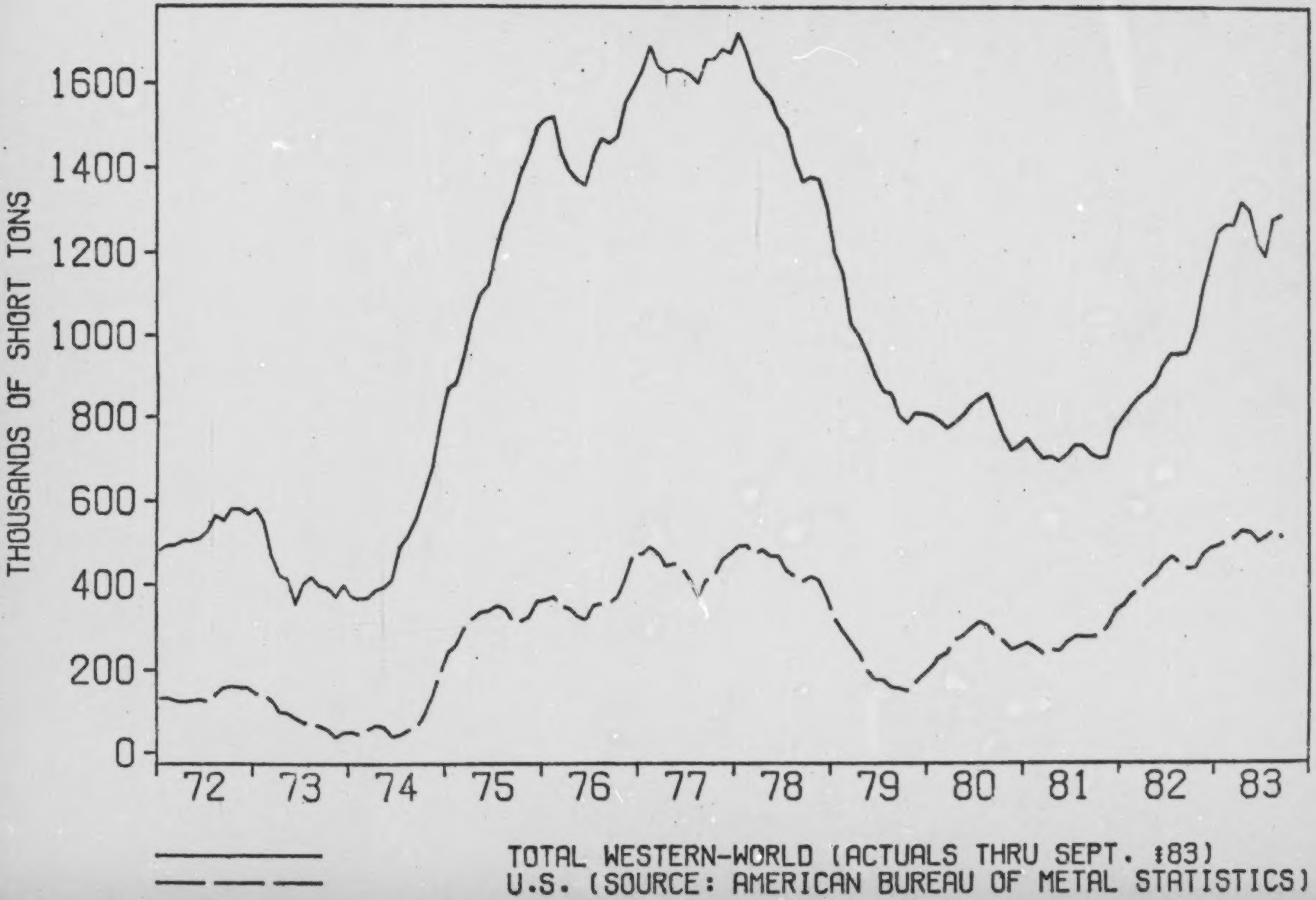


Table 2

Arizona Personal Income
1982 - 1983
($ millions)

	1982	1983	Percent Change
Earnings by Industry	19,900.25	21,664.80	+ 8.9
Farm	345.25	391.50	+13.4
Non-Farm	19,555.25	21,273.30	+ 8.8
Agricultural Services	137.35	155.70	+13.4
Mining	558.25	452.50	-18.9
Construction	1,465.50	1,786.60	+21.9
Manufacturing	3,658.25	4,059.35	+11.0
Durable Goods	3,033.75	3,385.55	+11.6
Non-Durable Goods	624.75	673.80	+ 7.9
Transportation, Communication and Public Utilities	1,384.25	1,451.75	+ 4.9
Trade	3,386.25	3,601.80	+ 6.4
Wholesale Trade	1,097.75	1,159.90	+ 5.7
Retail Trade	2,288.50	2,441.90	+ 6.7
Finance, Insurance and Real Estate	1,220.25	1,375.60	+12.7
Services	3,801.00	4,191.00	+10.3
Government	3,945.50	4,199.00	+ 6.4
Federal, Civilian	833.75	887.55	+ 6.5
Federal, Military	463.75	492.10	+ 6.1
State and Local	2,647.75	2,819.35	+ 6.5
Personal Contributions to Social Insurance	-1,333.75	-1,449.50	+ 8.7
Dividends, Interest and Rent	5,941.00	6,052.40	+ 1.9
Transfer Payments	4,607.50	4,993.50	+ 8.4
Total Personal Income	29,100.75	31,240.20	+ 7.4

Note: Totals may not sum due to rounding and/or adjustment.

Source: Bureau of Economic Analysis, U.S. Department of Commerce and Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona.

and proprietors' income which comprise the industrial sector plus government. Other components which constitute the remaining one-third are transfer payments, rent, dividends, interest, etc. The labor and proprietors' component of personal income outperformed these latter smaller sectors in 1983. Total Arizona labor and proprietors' personal income totaled $21.7 billion for an 8.9 percent annual increase. After adjustment for inflation and population increase, this represents a 2.3 percent gain, in real terms.

Performance among the industries varied considerably. Construction, reflecting its substantial gains in employment plus the normally high average weekly earnings of its workers, led all industries with an increase of 21.9 percent. Much farther behind were farm and agricultural services, each at +13.4 percent; finance, insurance and real estate, +12.7 percent; durable goods manufacturing, +11.6 percent; and services, +10.3 percent. The remaining industries, with the exception of mining, posted gains in the five to eight percent range. Mining was the only industry to record a decline, but it was substantial -- a drop of 18.9 percent.

The largest contributors to personal income among the industries are government, services and manufacturing (with durables and non-durables combined). Each of these contributed more than $4 billion to personal income with trade, including wholesale and retail, close behind at $3.6 billion. Most of the others range between one and two billion dollars. In absolute terms, three industries posted gains of more than $300 million to personal income in 1983: manufacturing, $401 million; services, $390 million; and construction, $321 million.

Review of Last Year's Forecasts

Our forecasts for 1983 published in the fall 1982 issue of The South-Western Review (which were prepared in October of 1982) compare favorably with the 1983 actuals. Although we missed a couple of subsectors by a fair margin, the errors tended to cancel so that our forecasts for the aggregate measures such as total employment, personal income, retail sales, and population were quite close. As shown in Table 3, our forecast for total wage and salary employment, for example, was only 1500 workers too low on a base of over a million -- an error of only one-tenth of one percent. The results for total personal income were also quite close: only 138.2 million too high, an error of four-tenths of one percent. We were 3.1 percent too high on retail sales, even though consumer spending was strong and the Christmas season was one of the best in a decade. Actuals for population are not as reliable as for other aggregate measures and during the year the figures were revised substantially; the best estimate for mid-year 1983 is now 1.5 percent higher than what we forecast last year.

Errors among the subsectors of employment tended to offset each other: we were too high for mining, manufacturing, trade and services, and too low for construction, TCPU, FIRE, and government. Our big misses were in mining and construction. We expected mining to stage a moderate recovery during 1983, but instead it slipped slightly. We also missed the big rebound in construction, but we were in good company. Errors in the remaining sectors were pretty reasonable given that the economy was near a turning point at the time the forecasts were prepared.

Interaction with the National Economy

Arizona is one of the fastest growing states (during the decade of the 1970s, it registered the second largest increase in population, which grew by 53.1 percent) so it compares very favorably with national statistics. Although at one time it was true that Arizona's economy was more or less insulated from swings in the national business cycle, this is no longer true. When the country is in a business cycle expansion, Arizona's growth outdistances the nation by a substantial margin, and when the country is in

Table 3

Arizona's 1983 Forecast: A Review of Accuracy

	1983 ACTUAL*	1983 Forecast (Prepared in October 1982)	Forecast Error Over (Under)	%
Personal Income ($ millions)	31,240.2	31,378.4	138.2	0.4
Retail Sales ($ millions)	16,815.2	17,339.1	523.9	3.1
Population (000s)	2,937.3	2,929.2	(8.1)	(0.3)
Wage & Salary Employment (000s)	1,045.0	1,043.5	(1.5)	(0.1)
Mining	15.5	21.1	5.6	36.1
Construction	72.4	56.6	(15.8)	(21.8)
Manufacturing	152.6	155.9	3.3	2.2
Transportation, Communications & Public Utilities	55.4	54.6	(0.8)	(1.4)
Trade	257.0	264.9	7.9	3.1
Finance, Insurance & Real Estate	62.7	62.6	(0.1)	(0.2)
Services	226.8	233.1	6.3	2.8
Government	202.8	194.7	(8.1)	(3.9)

*Actuals for 1983, before early 1984 re-benchmarking.

Sources: Arizona Department of Economic Security; Arizona Department of Revenue; Bureau of Economic Analysis, U.S. Department of Commerce; and Division of Economic and Business Research, The College of Business and Public Administration, The University of Arizona a down phase of the business cycle, Arizona generally still does better but not by as wide a margin. As Arizona's economy diversified over the past few decades, and as its industrial structure came to look more like that of the U.S., nationwide events have become more quickly mirrored locally. Now, when the national economy speeds up (or slows down), Arizona's economy responds in lockstep, with very little difference in timing.

During the 1981-82 recession, aggregate economic activity declined (as opposed to merely slowing down) in Arizona but the recession locally was shorter and not as severe as nationally. As shown in Table 4, the recession, as measured by non-agricultural wage and salary employment, lasted 13 months in Arizona compared to a 19 month slide nationally. The local economy also lagged by two months going into the recession, and recovered four months earlier than the national economy. The pace of recovery in Arizona has also been quicker: by November of last year employment had not only regained the number of jobs lost (24,000) but added an additional 19,100; the national economy had just managed to recover the 2.7 million it lost during the recession.

Figure 4 provides a visual juxtaposition of the two cycles. To facilitate comparison, both periods have been indexed so that respective low points of the recession equal 100, and each point of the cycle is expressed relative to its low point. For example, an index reading of 115 indicates a point 15 percent higher than the low point. Relative magnitudes of the declines are easily seen as well as the speed at which the current expansion compares with the prior expansion. The forecast, which extends two and one-half years into the future, is shown also, allowing comparison of the projected recovery with the period following the 1974-75 episode.

Comparing the 1981-82 and the 1974-75 recessions in Arizona, the recent recession was much less severe: in relative terms the decline of

Table 4

An Arizona Chronology of Two Recessions by Industry

1974-75 and 1981-82

Industry	Peak Month	Trough Month	Duration of Decline (Months)	Employment Decline Peak-to-Trough (Percent)	Percent Increase Since Trough[1]
Mining					
1981-82.........	Jun'81	Feb'83	20	40.5	2.0
1974-75.........	Jul'74	Mar'76	20	14.9	4.3
Construction					
1981-82.........	Jul'79	Sep'82	38	29.9	22.2
1974-75.........	Jun'73	Jul'76	37	40.7	40.0
Manufacturing					
1981-82.........	Aug'81	Nov'82	15	9.1	5.5
1974-75.........	Jun'74	May'75	11	15.0	8.3
TCPU[2]					
1981-82.........	Feb'82	Jun'83	16	2.2	1.9
1974-75.........	May'74	Jun'75	13	4.6	0.7
Trade					
1981-82.........	Sep'81	Mar'82	6	3.6	2.6
1974-75.........	Aug'74	Apr'75	8	1.0	8.9
FIRE[3]					
1981-82.........	**	**	**	**	* 3.0
1974-75.........	Jun'74	Mar'75	9	3.3	1.8
Services					
1981-82.........	**	**	**	**	* 5.0
1974-75.........	**	**	**	**	5.0
Government					
1981-82.........	May'80	Aug'81	15	5.0	5.9
1974-75.........	**	**	**	**	9.2
Wage & Salary					
1981-82.........	Sep'81	Oct'82	13	2.3	4.2
1974-75.........	Jul'74	Apr'75	9	4.8	5.5
U.S. Non-Ag.					
1981-82.........	Jul'81	Feb'83	19	3.0	3.0
1974-75.........	Oct'74	Apr'75	6	2.9	2.6

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[1] Through November 1983. For the 1974-75 cycle, the number shown is the percent increase during the same number of months.

**continued expanding

*increase since Oct.'82, lowpoint of the recession in Arizona.

[2] TCPU: Transportation, Communications and Public Utilities

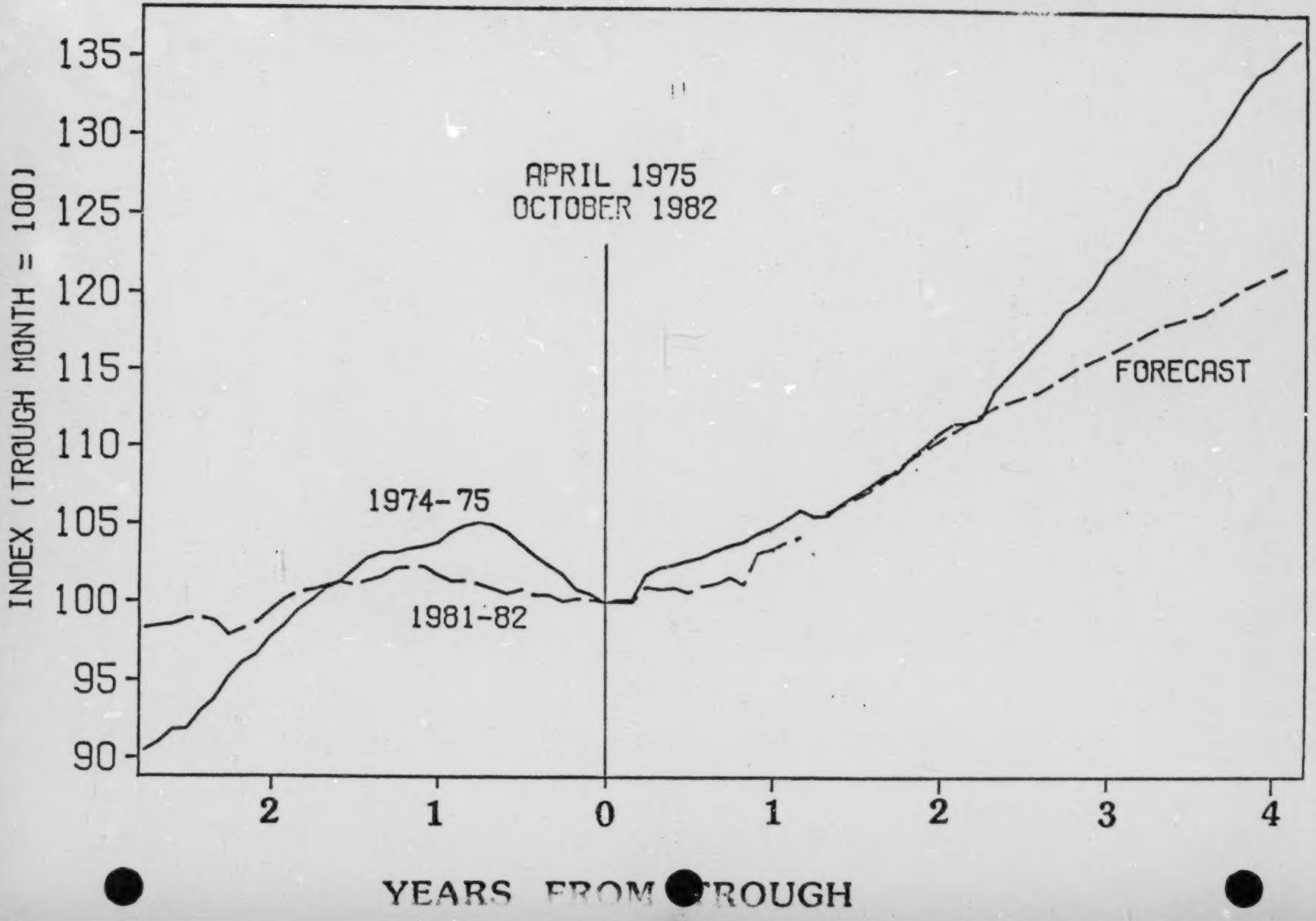
[3] FIRE: Finance, Insurance and Real Estate

All data are seasonally adjusted.

Source: Bureau of Economic Analysis, U.S. Department of Commerce, Business Conditions Digest; and Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona.

FIGURE 4

WAGE AND SALARY EMPLOYMENT, ARIZONA
1981-82 VS 1974-75 RECESSION



1981-82 was only half as severe, although it lasted longer (13 months compared to nine). Comparing the two periods during the first year of recovery, the past year proceeded at a slightly slower pace until the second half of 1983 when the pace quickened. During the second year, the forecasted expansion path coincides almost exactly with the second year of the prior expansion. The pace of the expansion in years three and four promises to fall short of that experienced in the prior period, however, as the high interest rate environment restrains such industries as housing and business investment from experiencing strong, late-cycle growth.

Outlook for 1984

The unanimous opinion among the nation's economists is that 1984 will be a good year. Inflation is still low, consumers and businessmen are highly optimistic, inventory-to-sales ratios are at record lows *vis-a-vis* strong consumer spending, indicating that inventory accumulation will be a factor, and there are no supply short falls expected among factors of production that could constrain growth. Additionally, interest rates are stable and are likely to remain that way given current federal policy and the November elections. Financing needs of the Treasury to accommodate the large federal budget deficit have exerted little upward pressure on interest rates given large inflows of foreign savings, a large budget surplus on the part of state and local governments, and healthy business cash flows that have kept businesses net suppliers of funds during last year. This picture promises to change, of course, as we approach year-end and as businesses turn to the capital markets to finance investment in plant and equipment, but most economists believe the clash in credit markets can be avoided until next year.

Given this sanguine outlook, economic conditions in Arizona should continue to improve markedly during 1984 (see Table 5). Additional declines of a percent or two in the unemployment rate should be accompanied by strong employment growth in the 6.0 to 6.5 percent range. Personal income should increase by 11.0 percent (to almost $35 billion), and although the pace of consumer spending should slow from the exceptionally strong Christmas season, retail sales should surpass $19 billion, a 13.2 percent increase (8.2 percent after adjusting for inflation). Arizona's population will surpass the three million mark, increasing by just over three percent. 1984 promises to be the best year that Arizona has experienced in a half decade.

Mining

The outlook is very positive for all sectors of the economy except mining. Although demand increased 18 percent last year, the huge inventory overhang, price competition from foreign producers, and a lagging recovery overseas suggest that 1984 may hold more of the same for domestic copper producers. There are a number of questions which must be considered in evaluating the outlook for the industry. Will the United States restrict foreign imports? Will the federal government resume a stockpiling program or impose tariffs on copper produced in countries where producers are not saddled by anti-pollution controls? Last year although U.S. producers cut production, foreign producers -- primarily Chile, Peru, Zaire, and Zambia -- increased production.

The president of one major U.S. producer predicted that without quotas, 60 percent of U.S. mines will be permanently shut down in ten years. About 40 percent of capacity is now temporarily shut down. In January, Kennecott laid off 400 more workers in its Utah Division, and Cyprus-Bagdad, an Arizona mine, shut down operations in February, affecting 700 workers.

Table 5 Economic Forecasts for Arizona, Selected Measures

	1982	1983	1984	1985	1986
Personal Income ($ millions)	29,100.8	31,240.2	34,680.1	38,326.0	42,209.8
percent change	5.6	7.4	11.0	10.5	10.1
Real Disposable Personal Income (millions of 1967$)	8,580.5	9,097.9	9,679.9	10,221.2	10,614.1
percent change	(0.2)	6.0	6.4	5.6	3.8
Retail Sales ($ millions)	15,517.4	16,815.2	19,030.9	21,074.2	23,093.7
percent change	2.1	8.4	13.2	10.7	9.6
Retail Sales (millions of 1967$)	5,287.9	5,611.3	6,072.4	6,422.6	6,685.8
percent change	(3.6)	6.1	8.2	5.8	4.1
Population (000s, mid-year)	2,886.5*	2,973.0*	3,066.2	3,165.4	3,264.7
percent change	3.1	3.0	3.1	3.2	3.1
CPI for the Western Region	293.5	299.5	313.3	328.0	345.3
percent change	5.8	2.0	4.6	4.7	5.3
Wage and Salary Employment	1,029.3	1,045.0	1,110.7	1,174.4	1,228.6
percent change	(1.1)	1.5	6.3	5.7	4.6
Mining	18.3	15.5	15.2	15.5	16.0
percent change	(26.7)	(15.6)	(1.8)	1.9	3.4
Construction	64.1	72.4	80.8	84.9	87.5
percent change	(10.9)	13.0	11.6	5.1	3.1
Manufacturing	153.5	152.6	168.2	183.4	196.8
percent change	(4.4)	(0.6)	10.2	9.0	7.3
Transportation, Communications, and Public Utilities	56.5	55.4	58.7	62.5	65.7
percent change	3.8	(2.0)	6.0	6.5	5.1
Trade	254.2	257.0	273.2	290.1	304.0
percent change	0.4	1.1	6.3	6.2	4.8
Finance, Insurance and Real Estate	61.7	62.7	65.9	70.1	73.7
percent change	1.5	1.6	5.1	6.4	5.2
Services	221.0	226.8	240.5	253.5	265.2
percent change	2.7	2.6	6.0	5.4	4.6
Government	199.9	202.8	208.4	214.6	219.7
percent change	0.2	1.4	2.8	3.0	2.4

* These estimates do not reflect recent revisions shown in Tables 1 and 3.

Source: Division of Economic and Business Research, College of Business and Public Administration,
The University of Arizona

If a recovery does materialize, it is not likely that employment will fully regain its pre-1982 peak (25,000 in 1979 and 26,900 in 1974). The industry will be leaner -- new labor-saving devices will allow equal or greater production at peak levels with far fewer workers. Also, new uses for copper will have to be found to offset recent inroads made by substitute materials, and some solution to the import problem must be found. The forecast assumes little if any recovery in 1984.

Construction

There is no question that construction, particularly in housing, did quite well in 1983, exceeding expectations. Since residential construction is the most labor-intensive of the three building sectors, the number of jobs grew quickly. The non-residential sector remained flat and the non-building (heavy engineering) sector performed only marginally on the positive side.

An analysis of recent construction awards indicates a shift in emphasis is about to take place. Over the past year, total awards reached $5.3 billion for a 38 percent increase over the level for 1982. Most of the gain is attributable to the residential sector as awards totalled $3.1 billion, for an 81 percent increase. This was in response to falling interest rates, increased availability of tax-exempt bond financing, pent-up housing demand, new residents and low vacancy rates. The non-building sector also performed marginally well on a level of awards of $1.2 billion for a 13 percent increase. Two large awards, however, accounted for more than half the total value of contracts. One was a $650 million award for an electric power plant expansion in Apache County and the other was a $58 million dollar award to repair and replace portions of a sewer system devastated in Greenlee County by floods in October 1983.

The non-residential sector was thus the lone detractor in an otherwise satisfactory contract awards performance, as awards totalled $1.0 billion for a decrease of three percent. That percentage has narrowed in recent months as the absorption rate of unused office and other commercial space has increased particularly in the metropolitan areas. The vacancy rate of such space is now down to approximately 11 percent, down from the high teens of a year ago when the sector was over-built. The outlook for 1984, therefore, should reflect a pause in major housing awards and a significant increase in non-residential building.

Construction employment is expected to increase by 11.6 percent this year, slightly lower than the 13.0 percent increase registered in 1983.

Manufacturing

Nearly all sectors of manufacturing began recovering last year and by year-end growth was proceeding at a rapid pace. The outlook for 1984 is that this expansion will continue and may even accelerate. A significant portion of the manufacturing industry in Arizona is defense-related or in the high technology area. Both of these sectors are being heavily emphasized and funded by the federal government. In addition, several large manufacturers have announced relocation and/or expansion plans in Arizona.

A little known factor is that over the last decade non-electrical machinery was the major growth sector in manufacturing, increasing its share of employment from 10.8 to 16.3 percent. There is no question that with a 23.4 percent share, the electric and electronic equipment sector (which includes high-tech) remains the leader in total employment, a position it has held for two decades. Nevertheless, those who feel Arizona's future is tied to electronics will find this a welcome development with respect to diversity within the industry.

Manufacturing employment is expected to increase by 10.2 percent this year, with the aerospace and electronics sectors leading the way.

Service Related Sectors

Arizona's service related sectors have suffered through two years of very slow growth. Employment in the services sector grew by an average of only 2.5 percent over the last two years, the slowest growth ever recorded. Slow growth economy-wide as well as weakness in the non-profit sector (which comprises almost 20 percent of services), due to cutbacks in government funding, were the major factors. The finance, insurance, and real estate sectors have grown an average of 1.7 percent, and trade, which was depressed by repeated devaluations of the Mexican peso, grew by less than one percent per year. In the transportation, communication and public utilities industries, minor declines were registered due to weakness in building activity, breakup of AT&T, and depressed movement of mining related materials.

In 1984, all service related sectors are expected to show respectable growth of five to six percent.

Government

After declining in 1981, employment in government registered miniscule increases in 1982 and 1983, largely due to fiscal restraints on all levels of government. The decline in 1981 was largely the result of state-wide reforms of the property tax, which produced a major readjustment in the school system. The last two years reflected cutbacks in federal and state and local non-education sectors. Some of the reasons are highlighted in the following section concerning state government finances, which also indicates that the fiscal crisis is now behind us, and that government payrolls may be ready to expand once again. Over the course of last year (end of December 1982 through December 1983) employment in schools grew 5.3

percent and federal government grew by 2.4 percent, while state and local non-education employment declined by 0.8 percent. The latter sector appears ready to resume growing again which should allow the aggregate government sector to increase by 2.8 to 3.0 percent annually, slightly less than the rate of population growth.

State Government Finances

Arizona's state government, along with the governments of many other states, has experienced difficulty in maintaining a balanced budget during the past two years. Cutbacks in federal aid and reduced revenues due to the extended period of economic stagnation are two major reasons for the difficulty. A third, equally important factor is extensive tax breaks granted by Arizona legislators over the past few years in sympathy with the nationwide tax-payer revolt. According to one estimate, reductions to the tax base have lowered receipts by some $400 million per year.

As Table 6 shows, the amount of "carry forward" from the 1979-80 budget was almost 20 percent of expenditures. Following the success of California's Proposition 13, Arizona's legislators enacted legislation that: 1) cut and limited future growth of property taxes; 2) repealed the sales tax on food for home consumption; 3) indexed individual income tax brackets, standard deduction, credits for renters and exemptions for persons age 65 or older; and 4) passed other tax reduction measures.

Faced with a budget short-fall during fiscal year 1982-83 in the neighborhood of $200 million, legislators were forced to raise additional revenues and cut spending to avoid running a deficit, which is prohibited by Arizona's constitution. State agencies whose budgets are not frozen by statute or formulas (an estimated 60 percent is frozen) were required to cut spending by ten percent. Some of the measures implemented were a

Table 6

Arizona State Government Finances
Fiscal Years 1976 to 1985
($ millions)

Fiscal Year (ending June 30)	General Fund Appropriations	"Carry Forward"
1976	745.6	14.7
1977	822.7	53.6
1978	1030.6	32.3
1979	1068.0	117.1
1980	1189.6	234.3
1981	1498.5	133.4
1982	1632.7	17.5
1983	1613.7	0.1
1984 (est)	1805.9	2.5
1985 (est)	1950.9	(74.0)

Note: The negative carry-forward projected for 1985 assumes existing law as of February 1, 1984 and recommended funding levels.

Source: Arizona Joint Legislative Budget Committee, Annual Budget, Fiscal Year 1985, Summary.

hiring freeze, cuts in travel, and postponement of employee salary increases. On the revenue side, a number of measures were adopted to speed up the collection of sales taxes, withholding and income taxes. Enforcement efforts were increased, the option for paying individual income taxes in two installments was eliminated, employers were required to transfer employee withholding taxes to the state on a monthly rather than a quarterly basis, lottery winnings of $5000 or more became subject to taxation, certain gambling and lottery winnings became subject to withholding, unemployment benefits were taxed for incomes over $12,000, and the minimum withholding rate for employees with annual compensation over $15,000 was raised from 10 percent to 15 percent of federal withholding. Additionally, a temporary sales tax equal to 25 percent of the normal rate (e.g., a category normally taxed at four percent would be subject to an additional one percent) was introduced for all categories subject to the state's sales and use tax. The temporary tax on retail sales was set to extend from June 1, 1983 to June 30, 1984, whereas the higher tax for all other categories (such as mining, restaurants and bars, contracting, utilities, etc.) was to be in effect for a five month period from January 1, 1984 to May 31, 1984.[1]

These measures were barely sufficient to avoid a negative carryforward last year with the ending balance only $132,000 in the black. In the current year, revenues should exceed expenditures by almost $2.5 million, but next year the state could again be facing a deficit in the neighborhood of $75 million as the temporary sales tax expires. In the current session legislators are considering ways to increase taxes, perhaps by extending the temporary tax, closing various loop holes in the income tax law, adopting a flat-rate income tax, etc.

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[1] Arizona also raised the tax on gasoline by five cents in steps: a two cent increase effective July 1, 1982, another two cent increase on July 1, 1983, and one cent effective July 1, 1984. Proceeds from the fuel tax go into the Highway User Revenue Fund rather than the General Fund and therefore do not affect the above discussion of General Fund balances. Taxes on luxury items were also raised recently but proceeds were earmarked to fund needed expansion of the state's correctional facilities, and therefore do not affect the General Fund.

Any discussion of future deficits must include, of course, assumptions about anticipated growth in spending. After suffering through a spending reduction during fiscal year 1983, current year spending bounced back by almost 12 percent, and according to estimates of the legislature, spending for next year (fiscal year 1985) is expected to increase by eight percent. Any legislated tax increases during the current session are necessary only to fund increased spending; if spending were not increasing, there would be no deficit. The eight percent projected increase for fiscal year 1985 outstrips expected inflation but still remains far below the almost 14 percent annual increase for the 1976-1982 period.

Agriculture

It should come as no surprise that agricultural employment in the United States has been in long-term decline. The same is true in Arizona. While the value of farm and ranch products increases, due chiefly to inflation, employment in the industry continues to decline. The decline has been steady with occasional brief pauses. Since 1979, the average yearly losses have been approximately 400 jobs. Last year for the first time the average level of employment dipped below 20,000. It averaged 19,600 for the year.

The farm and ranching industry is undergoing changes much like other industries. With the continuing quest to hold down costs, the industry is becoming more automated. Automatic feeding systems for animals, automatic drip and fertilizer application systems for crops have had the effect of reducing labor costs for producers in order to remain competitive. This trend is unlikely to change. The outlook is, therefore, for an additional loss of 300 to 400 jobs in 1984. At some point in the future, the decline will level and remain stable but at this time that point remains beyond 1984.

Tourism

Winter tourism activity in Arizona depends heavily upon a delicate balance of climatic factors to provide an ideal scenario for a successful season. These factors include: 1) abundant sunshine and moderate temperatures in the southern part of the state; 2) equally abundant snowfall in the northern region of the state; 3) a severe winter in the northeast and midwest; and 4) cold wintery weather in other normally warm competitive areas such as Florida. All factors fully materialized this winter. A major freeze in Florida severely damaged citrus and other crops and, more importantly for Arizona, blunted travel plans by some visitors to that state. Snowfall in northern Arizona was adequate to assure a moderately successful skiing season. Tourism and travel indicators in Arizona were generally up during the winter months to start 1984 on a high note.

The outlook for summer tourism is mixed. With the continuing decline in the cost of fuel, travelers are expected to take to the road, particularly to the cooler areas of the state. For those participating in water sports in the water-based recreation areas, lower fuel costs will be particularly important. Residents and non-residents are likely to take long postponed vacations due to the recent recession. A strong dollar has been a two-edged sword. It has induced Americans to take foreign vacations, sometimes in preference to one in Arizona. More importantly, there was a noticeable decline in foreign visitors to Northern Arizona last summer which may continue this summer. These visitors generally favor the large well-established attractions. Some of the decline is a direct result of the continuing stagnation of economies elsewhere, particularly in Europe. It is questionable whether those economies will recover in time to allow Europeans to rekindle their love affair with the Grand Canyon, cowboys and Indians. Conditions in Mexico have also had a severely depressing effect on visitor activity and expenditures, particularly along the border. The latter, however, is now a chronic condition with no end in sight.

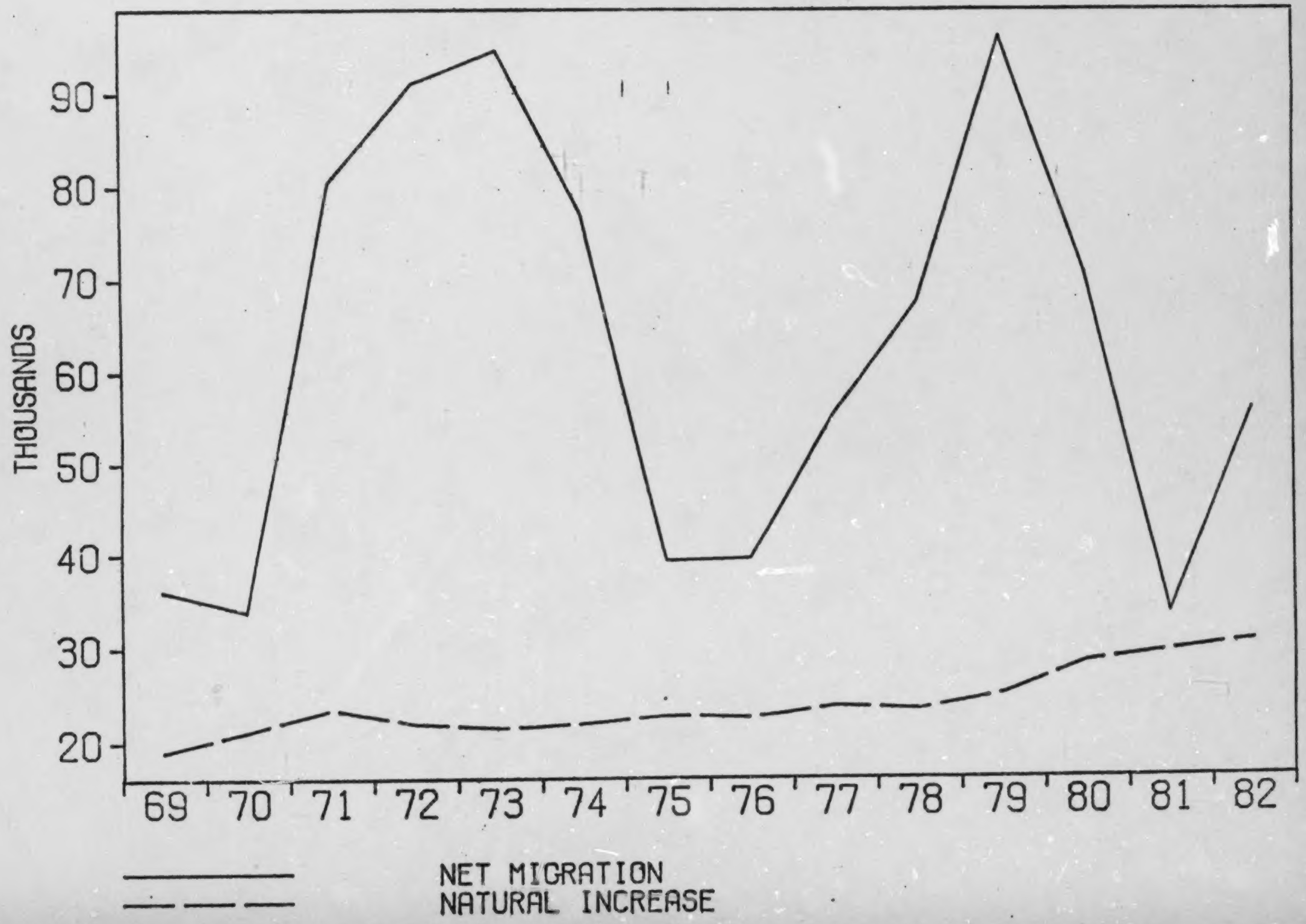
Population

Arizona's population has increased by nearly 1.1 million people since 1970. In 1970, natural increase (births minus deaths) added roughly 21,000 persons each year. Currently, that component of growth is adding close to 30,000. Natural increase, however, only accounted for roughly one-third of the total increase in population during the decade of the 70s while net migration accounted for the remaining two-thirds.

Net migration added an average of 64,000 people per year from 1970 to 1982, but as shown in Figure 5, yearly amounts proved to be very erratic. During this period, net migration ranged from a high oF 96,000 people in 1979 to a low of slightly more than 33,000 people in 1981. It also tended to increase dramatically during expansions and to slow dogn during recessionary periods. Migration flows are retarded during recessions by high interest rates, high unemployment, low consumer confidence, and peoples' inability to sell their existing houses. Net migration fell sharply during the 1974-75 and 1980 recessions; during the 1981-1982 recession, migration rose slightly but remained at the recessionary level to which it fell during 1980. It is estimated that net migration in 1983 was approximately 60,000, and that it will increase substantially as the expansion continues. New firms continue to express strong interest in establishing operations in Arizona, and healthy employment gains and continuation of the upward population spiral are expected.

URE: 5

NET MIGRATION VS NATURAL INCREASE
ARIZONA



Long Range Trends

Looking beyond 1984 becomes more problematic as economic policy becomes the key determinant. If this business cycle were "normal," we could expect 1985 and perhaps 1986 to be years of continued expansion. It is likely that efforts to balance the federal budget -- some combination of increased taxes and lower government spending -- and efforts of the monetary authority to restrain price increases will combine to produce a recession in 1985 or 1986. Clearly, accurately calling the turning point that far into the future is impossible, so in preparing a long-term forecast, factors which govern the economy's potential growth path become important. The five-year forecast for Arizona shown in Table 7 is based on the assumption that a recession will be avoided, but the underlying growth rate of the national economy will continue to slow as it did during the past decade. Cumulative growth in real GNP over the five-year period will be 18 percent, about average for the entire post World War II period. Price increases will average about five to six percent annually, and real interest rates will remain high due to large federal deficits, deregulation of financial sectors, and continued determination on the part of the Federal Reserve Board to control inflation.

Prospects for growth in Arizona during the next five years are much greater than what is expected for the nation. Obviously, Arizona's economy is not subject to the same constraints that affect the U.S. economy. Arizona is open to the free flow of labor and capital, both of which will continue to flow into the state as long as Arizona maintains its competitive advantage. Factors often cited for this advantage are favorable climate, relatively low costs of doing business (low taxes, low wage scales, cheap energy, "right to work" laws, etc.) and a relatively low cost of living. There is no reason to anticipate a change in these factors in the next five years, and therefore Arizona should continue to be one of the fastest growing states in the country.

Five-year growth prospects in Arizona also are greatly improved when compared to the five-year period just ended. For example, total wage and salary employment is expected to grow by almost 30 percent between 1983 and the end of 1988, compared to a 17 percent increase from 1978 to 1983. Other measures suggest a similar result: real disposable personal income will grow by more than 30 percent compared to only 16.4 percent over the five years just ended, and retail sales in constant dollars will increase 35 percent versus 4.5 percent.

We should not, however, expect a repeat of the spectacular growth experienced between 1975 and 1980. During that period, employment increased almost 40 percent. Much of that growth occurred in the Phoenix metropOlitan area as dhe construction, manufacturing and servicec industries registered extraordinary increases. The Tucson area also contributed to the boom with spectacular growth in the manufacturing sector. During this period, nominal personal income and retail sales doubled, but after adjusting for large tax increases and runaway inflation, both measures increased about one-fourth that amount. During the next five years, growth state-wide will not be as robust as during the 1975-1980 period because of slower growth nationally and because the cyclical sectors of our economy will not register as large a swing due to historically high real interest rates which are expected to persist throughout the period.

In comparison to other parts of the country Arizona continues to be regarded as one of the fastest growing during the next two decades. A recent study by Chase Econometrics of Bala-Cynwyd, Pennsylvania, predicted

Table 7

A Five-Year Outlook for Arizona

	Cumulative percent change over the 5-year period		
	1975 to 1980	1978 to 1983	1983 to 1988
Personal Income (current dollars)	101.8	76.7	67.9
Disposable Personal Income (constant dollars)	25.5	16.4	30.4
Retail Sales (current dollars)	100.5	58.6	73.8
Retail Sales (constant dollars)	26.4	4.5	35.0
Population	19.4	18.4	16.0
Wage and Salary Employment	39.1	16.8	29.9
Mining	(14.6)	(12.1)	37.8
Construction	75.0	1.4	42.7
Manufacturing	54.7	20.5	43.5
Service related industries*	43.2	24.7	30.4
Government	18.9	3.4	12.9

* Includes employment in Transportation, Communications, Public Utilities, Trade Finance, Insurance, Real Estate, and Services.

Source: Department of Economic and Business Research, College of Business and Public Administration, The University of Arizona that the Tucson metropolitan area would be the sixth-fastest of 112 metropolitan areas in terms of job growth over the next decade. The Phoenix metropolitan area ranked fourteenth.

In looking toward the year 2000, the U.S. Census Bureau recently released new projections in which Arizona ranked as the third fastest growing state. According to their figures, Arizona's population will double by the year 2000, growing from 2.7 million in 1980 to 3.9 million in 1990 to 5.5 million by the year 2000. The average rate of growth over the 20 year period is 3.6 percent annually (compounded). The study predicts that by the year 2000 Arizona will be the fifteenth-most-populous state, compared to its 1980 ranking of 29.

Another view is shown in Table 8. These projections are the "official" ones and are used for planning purposes by various agencies within the state. The official projections suggest a year 2000 population of over 4.7 million.

Although great uncertainty exists with any long-term projection, and although projections may differ widely, it is clear that Arizona is commonly expected to grow much faster than the nation as a whole, and continue to rank high among leading growth areas.

Table 8

Arizona Population Estimates and Projections

Selected Years: 1950 - 2000

Year	Population*
1950	749,600
1960	1,302,200
1970	1,775,400
1980	2,731,000
1990	3,678,100
2000	4,710,400

Period	Compound Annual Growth Rates
1950 - 1960	5.7%
1960 - 1970	3.1%
1970 - 1980	4.4%
1980 - 1990	3.0%
1990 - 2000	2.5%

*Figures for 1950, 1960 and 1970 are as of April 1, – for 1980, 1990 and 2000 they are mid-year.

Source: Arizona Department of Economic Security, and Bureau of the Census, U.S. Department of Commerce.

COLORADO

THE FUTURE OF THE COLORADO ECONOMY IN HISTORICAL PERSPECTIVE

by

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Introduction

Along with the Mountain West in general, Colorado has experienced high rates of growth of employment and population during the post-World War II period. Between 1950 and 1982 nonagricultural employment in the U.S. increased by a factor of 2.00, whereas that in the Mountain West grew by a factor of 3.59. During the same period nonagricultural employment in Colorado increased from 361,300 to 1,311,700 jobs, or by a factor of 3.63. At the same time national population increased by slightly over 80 million persons, which represented a 53-percent rise. Population of the Mountain West grew by 124 percent, and that of Colorado grew from 1,325,000 to 3,045,000, or by 130 percent.

In this paper we describe the contemporary behavior of the Colorado economy and provide short- and long-term forecasts of economic activity in the state. These forecasts are derived from the Colorado Forecasting and Simulation Model (COFS), which is housed in the Center for Economic Analysis at the University of Colorado, Boulder. Because much of the paper concerns these forecasts, we begin with a brief description of the methodology that underlies the COFS model. We then describe the contemporary Colorado economy with particular focus on 1983 and 1984. Since the COFS Model is a long-term, annual forecasting model, it allows Colorado forecasts to be extended to any period for which a national forecast is available. We discuss forecasts to 1992. We also place contemporary and expected future economic conditions in Colorado in historical context. This treatment includes an examination of past and future changes in the structure of the Colorado economy, and it also includes a comparison of the Colorado and U.S. economies.

Population growth in the Mountain West has clearly been fueled by substantial net in-migration and by an age composition that favors a higher rate of natural increase. Moreover, migration has both partly caused and partly accommodated the high rate of employment growth that has been experienced. The position taken in this paper is that if we are to meaningfully discuss the economic prospects for the Mountain states in general and Colorado in particular, we must seriously consider future prospects for continued net in-migration. The age structure of the nation's population is shifting in such a way as to make continued heavy net in-migration less likely than it has been in the recent past. Thus, the final major section of this paper considers the volume and composition of migration to and from Colorado.

The Colorado Forecasting and Simulation Model

Because the forecasts provided in this paper are derived by means of a methodology referred to as the Colorado Forecasting and Simulation Model, or COFS, let us briefly describe this model. This computerized, long-term annual forecasting and simulation model represents a new approach to regional economic analysis. The key feature of this approach is the integration of economic base and input-output structures with neoclassical behavior and production theory.

The core supply-side relationships of the model are derived from a regionalized version of the 501-sector U.S. input-output table. These sectors are aggregated to the 53 industrial sectors that make up the model. The model is linked to U.S. economic activity through an approach similar to economic base analysis in that the model includes regional purchase coefficients, which measure the fraction of each industry's output that is purchased locally. This much of the model is fairly traditional.

One feature that makes the COFS approach innovative is that the model incorporates production functions that allow for factor substitution between labor and capital based on relative factor prices. Changes in factor prices plus other costs of doing business, such as tax rates, energy, and transportation costs, are allowed to determine the location responsiveness of regional export and import industries. Finally, the demand side of the model is closed by the complete determination of regional real disposable income using tax and price determination equations and wage rates, dividend and proprietors incomes, etc., determined elsewhere in the model.

Since the model must equilibrate the supply (employment) and demand (income) sides of its economy, the input data used to calibrate the model must be consistent. That is, the income data must correspond to the employment level. The Bureau of Economic Analysis of the U.S. Department of Commerce generates such a series using ES202 employment and income data from the Bureau of Labor Statistics, supplemented by estimates for employment not covered by unemployment insurance, and self-employment income from various other sources. Through the adjustment process, both the original employment and income data series are changed somewhat. Thus the levels of employment in the BEA historical series differ from those reported by the BLS and the Colorado Division of Employment and Training. While at first glance this lack of comparability can be disconcerting, the rates of employment growth from year to year are almost identical, and the use of the BEA series allows the model to yield much more information than employment levels alone.

The National Assumptions

The COFS model is linked to U.S. economic activity through the regional purchase coefficients, and thus the model must be "driven" by a long-term national forecast. The forecast used to drive the model is provided by Wharton Econometric Forecasting Associates.

Since this volume includes a paper that describes the Wharton forecast in detail, only a brief summary is presented here. The first three years of Wharton's annual long-term forecast are taken from its Quarterly Model Outlook. Wharton is forecasting continued strong recovery during 1984, when the average annual growth rate of real gross national product is expected to be 5.8 percent. In 1985 the rate is expected to moderate to about 3.6 percent. A fairly serious recession is anticipated in 1986, with the growth rate of real GNP averaging only 0.5 percent. A major reason for this recession is the expected repeal of personal income-tax indexation, which is currently due to go into effect on January 1, 1985. This repeal will in turn undercut real disposable personal income. Moreover, the world excess supply of oil will have been exhausted, and oil prices will thus rise significantly from 1985 to 1987, which will spur inflation and mortgage rates. Recovery to about a 4.5 percent rate of growth of real GNP is anticipated in 1987.

In general, the rate of growth of GNP between 1983 and 1992 is expected to be about 3.0 percent. Wharton's 10-year forecast for spending on consumer durables calls for an average growth rate of about 2.8 percent, compared to 1.8 percent for nondurables and to 2.8 percent for services. Housing starts are expected to fall sharply in both 1986 and in 1990, when a second national recession is anticipated as the growth rate of real GNP falls to 0.4 percent.

The forecasts included in the discussion below were generated in January, 1984, using the Wharton long-term forecast published in November, 1983. At the time the Colorado forecast was generated September, 1983, was the last month for which partial employment data for the state were available. Thus, in the discussion below, figures for 1983 are still forecast estimates.

Contemporary Behavior of the Colorado Economy

Colorado's economy has typically performed considerably better than the national economy during recessionary periods. This behavior is due in part to the underlying growth trend of the state's economy as a whole, but especially of the mining, services, durable manufacturing and construction sectors. As Figure 1 indicates, during the 1974-1975 recession, the state maintained a small positive rate of growth in employment, while the national rate of growth fell to -1.2 percent in 1975.

The state's economic performance during the most recent recession exhibited this same strength, but the state lagged the nation in the timing of the downturn and the strength of the recovery. As Figure 1 shows, the rate of U.S. employment bottomed out at -0.9 percent in 1982 and rebounded by a full percentage point to 0.3 percent in 1983. Colorado's employment growth rate dropped to 1.2 percent during 1982 but did not rise above that same rate by the end of 1983. Total output figures reflect this same pattern. During 1983, as the national GNP rose at a rate of 3.5 percent, Colorado's rate of growth of real output was 2.8 percent. This lag in recovery can be explained by looking at the industrial mix of the state.

The 1983 Experience

While employment in mining makes up only about 3 percent of the total Colorado labor force, most of this employment is in rural areas of the state where mining's share of total employment is much higher. Thus the income generated, or not generated, by this sector has a much larger impact on local income-dependent sectors, such as retail trade and services, than the 3 percent state share would initially indicate. During the period of 1975 to 1980 mining was the fastest growing sector in the Colorado economy (17 percent per year), and during 1981 employment in this sector grew by over 20 percent. However, the oilshale shutdown in mid-1982 cut employment in the coal and nonmetals sector by 26 percent that year. Moreover, in 1982 the metals sector was hit by the drop in national demand for durable goods and particularly steel, and lost 17 percent of the sector's workforce. Only the continued growth in oil and gas extraction employment kept the overall mining employment growth rate positive in 1982. In 1983, oil and gas extraction employment dropped by 2 percent while the metals and coal and nonmetals subsectors continued to lose employment, resulting in a decline in mining employment of 9 percent.

During the last 15 years Colorado's durable manufacturing sector has experienced a rate of employment growth that has been approximately twice as high as that of the nondurable manufacturing sector, and somewhat higher than the state's overall rate of employment growth. Between 1967 and 1981 Colorado's average annual rate of employment growth was 4.5 percent, but its durable manufacturing sector averaged 5.5 percent. Meanwhile nondurable manufacturing averaged 2.8 percent. Over the same period of time, national employment in nondurables increased by 61,000 jobs, or at an average annual rate of only 0.1 percent, whereas durables grew at an average rate of 0.5 percent. Thus, Colorado's manufacturing durables sector has in the recent past grown at more than 10 times the corresponding national rate, and its nondurables sector at about 30 times the corresponding national rate. These high rates of growth helped to slow the Colorado manufacturing sector's entry into the past recession. While nationally, manufacturing employment began declining in 1980 and continued to decline through 1983, in Colorado manufacturing employment did not decline until 1982. However, the continued decline during 1983 of this sector in Colorado was greater, namely -2.2 percent, than the national rate of -1.1 percent.

Within the remaining non-manufacturing sectors half the sectors experienced increased rates of employment growth and half experienced decreased rates. Most significant among the declining sectors is transportation and public utilities. This sector continued to grow through the recent recession; however, during 1983 the sector lost 2,100 jobs, primarily in the transportation subsectors. The 1983 growth rate of this sector was -2.5 percent compared to a 3.6 percent increase in 1982. Wholesale trade showed almost no employment change during 1983, down from a 2.1 percent increase in 1982, whereas the finance, insurance, and real estate sector employment growth rate slowed from 3.7 percent to 3.0 percent. Among the sectors that experienced increases in employment growth rates, contract construction and government led the way with increases from 2.3 to 3.3 percent and 0.3 to 1.2 percent, respectively. Retail trade and services also exhibited small increases in employment growth rates during 1983, from 1.8 to 2.0 percent and 3.3 to 3.4 percent, respectively.

1984 and Beyond

The prospects for most of the sectors of Colorado's economy are bright for 1984. Colorado is expected to continue to maintain the pattern of employment growth rates that exceed those of the national economy. However, as Figure 1 indicates, during the late 1980s and early 1990s Colorado's economic activity is expected to track the national cycle much more closely than it has in the recent past. That is, whereas the Colorado line follows the U.S. line closely as to peaks and troughs, later in the 1980s it will lie closer to the U.S. line. A lesser difference will exist between Colorado's rate of employment growth and that of the U.S. One reason for this convergence is the maturing of the baby-boom generation out of the age classes for which migration rates are high. In the past Colorado has had a very large and mobile young age cohort from which to draw migrants to accommodate its rapidly growing employment opportunities. This issue is discussed is more detail at a later point in the paper.

Table 1 reports annual forecasts of employment and other selected variables. Of the major industrial sectors, services, followed by government and retail trade, accounts for the largest share of Colorado's employment. In 1983 these industries respectively accounted for 21.8, 20.7, and 17.2 percent of the state's employment. The current forecast shows employment in the service sector growing by 136,000 jobs between 1983 and 1992, while government grows by approximately 72,000 and retail trade by 76,000 jobs. During the period these three sectors are expected to account for 69 percent of the state's incremental employment of 413,319 jobs. Moreover, between 1983 and 1992 employment in Colorado's manufacturing durables sector is expected to grow by about 31,000 jobs, which represents an increase of 27 percent. Note, however, that Table 1 indicates that employment in the nondurables sector will peak in 1984 and then begin a gradual secular downward trend thereafter.

In the shorter term, services, durable manufacturing, contract construction, and retail trade are expected to lead the increase in employment levels during 1984. In fact, these four sectors will account for over 70 percent of the total increase in employment during 1984. The increase in durable manufacturing not only represents the overall national trend in that sector, but also the continued competitive advantage of the overall cost of doing business in Colorado relative to the U.S., particularly in the fabricated metals, non-electric machinery, electrical equipment, and transportation equipment sectors. Within non-manufacturing, only contract construction has a cost of doing business index that is above the national average.

The expected growth of construction employment is the result of years of pent up demand for housing that resulted from the combination of several years of extremely high mortgage rates followed by a severe recession, during which time large numbers of net migrants continued to arrive in the state. Furthermore, Colorado's indigenous baby-boom generation was maturing into the age classes most frequently associated with home ownership. These patterns coincide with an apparent shift in demand patterns toward new construction which is bypassing the extremely large inventory of previously owned housing that continues to be on the market.

Increases in employment in the service and retail trade sectors are a response to the increase in consumer spending that comes from personal income gains made as the current recovery continues. The employment expansions in these sectors are expected to peak during 1985 and then slow again during the forecast 1986 "growth pause."

One other sector of special interest is mining. As the national economy recovers, the demand for steel and therefore molybdenum will increase. This will boost employment in the metals component of the mining sector. However, oil prices are not expected to rise sufficiently to breathe life back into the oil shale sector until 1986 at the earliest. Thus, not until 1987 is employment in the mining sector expected to reach the level at which it peaked in 1982. This observation has important implications for many of the rural regions of the state.

Structural Change in the Colorado Economy

Table 2 reports shares of Colorado employment in broad industrial sectors in 1970, 1975, and 1980, and also reports corresponding information for forecast years 1985 and 1990. These data allow an assessment of past and future changes in the industrial structure of the state's economy.

The most dramatic changes have occurred in the government and service sectors. Between 1970 and 1980 government's share of state employment fell from 27.6 percent to 21.5 percent, due mainly to a substantial decrease in the employment share of the federal government, which declined from 12.5 to 7.3 percent. This decline in the prominence of the government sector is expected to continue, but at a substantially slower rate. To a large extent the decreased share of government employment has been offset by an increased share of service employment, which rose from 17.8 to 20.5 percent between 1970 and

1980. The service sector now constitutes the largest source of state employment, and this sector is expected to experience a continuing increase in its share.

In 1980 manufacturing employment's share of total Colorado employment (13.4 percent) was almost identical to that of 1970. By 1990 this share is expected to decrease by about 2 percentage points. Other sectors show very little movement, either historically between 1970 and 1980 or as forecast between 1980 and 1990.

The rate at which industry-specific employment has grown in Colorado relative to the U.S. is of considerable interest. Table 3 reports such information for 4 periods, namely, 1970-1975, 1975-1980, 1980-1985, and 1985-1990. Data for 1985 and 1990 are forecast values drawn from the Colorado Forecasting and Simulation Model. All ratios of rates of growth are calculated as X_t/X_{t-1} divided by Y_t/Y_{t-1}, where X is an industry-specific value for Colorado and Y is the corresponding U.S. value.

Note that during the 1970s manufacturing employment grew at rates well in excess of the national rate. Note also that Colorado's relative advantage narrowed considerably during the 1970s and is expected to continue to narrow during the 1980s. Much the same is true of finance, insurance, and real estate, which had a sizeable advantage in Colorado relative to the U.S. during the early 1970s, but an advantage that has declined steadily to the present and that is expected to do so into the future.

The remaining industries display a mixed pattern. Between 1975 and 1980 Colorado's mining sector grew at a rate almost 34 percent higher than the national average. During the early 1980s contract construction is expected to grow at a rate about 23 percent higher than the national average. The Colorado service sector grew at a rate somewhat higher than the national rate during the early 1970s. During the late 1970s and early 1980s the growth rate of this sector slowed considerably relative to the national rate, and during the late 1980s Colorado's rate will be very close to that of the nation. Since the service sector tends to be population serving, the expected decrease in Colorado's net in-migration will contribute to the slower rate of growth of the service sector. Migration is discussed in some detail in the following section.

Table 4 reports shares of Colorado employment in each major industry relative to shares of national employment in the same industry. Thus, a value of 2.000, for example, indicates that Colorado has twice as high a share of its employment in a given industry than the nation does. As of 1980, Colorado had only about 64 percent as much of its total employment in manufacturing as the U.S. Service employment was very close to equally represented in the state and the nation. Mining particularly stands out as being over-represented in Colorado. Contract construction and federal government employment are also, but whereas the differential is expcted to rise for the former, it is expected to fall for the latter.

Migration To and From Colorado

As shown above, population and economic activity have grown at extremely rapid rates in Colorado during the post-World War II period. Net migration to Colorado has in large part accommodated economic growth by providing sizeable numbers of labor force members without whom employment could not have grown either as rapidly or as much. Moreover, migration has also caused economic growth not only by augmenting the state's labor supply, but also by affecting labor demand. As important as migration is for the state, until recently no comprehensive study of Colorado migration has been undertaken. Because we consider prospects for continued migration to Colorado to be very important in any study that focuses on the future of the state's economy, in this section we summarize a recent study entitled "Migration To, From, and Within Colorado: Causes, Consequences, and Forecasts" that was undertaken at the Center for Economic Analysis at the University of Colorado, Boulder, and that was supported by the Colorado Commission on Higher Education.

Since Colorado in-migrants originate elsewhere in the nation and indeed in the world, and since Colorado out-migrants move to destinations outside of the state, we cannot truly understand Colorado migration apart from economic and demographic changes occurring in the nation as a whole. One of the most important of these national conditions is the aging of the baby-boom generation. Consider Table 5, which shows the age structure of U.S. population in 1970 and in 1981. This table is a mini demographic history of the U.S. during the twentieth century. It shows that the population aged 40 to 49 declined absolutely between 1970 and 1981, as did that aged 14 and less. The former age cohort was born during the depression when birth rates were low (about 18.4 per 1,000 population), and the latter was born after 1965 during which period the national birthrate fell to an all-time historic low of 14.7 per 1,000 population (in 1975 and 1976).

Of more immediate interest, however, is the population aged 20 to 39--the so-called baby-boom generation. This age group was largely born during the 1940s and 1950s when birth rates were at very high levels. For example, the birth rate in 1957 was 25.3 per 1,000 population. Note that between 1970 and 1981 the population aged 20 to 39 increased by approximately 22 million, or by an average of about 2 million per year. Many important economic and social changes have been associated with the birth and aging of the baby-boom generation. The fortunes of certain industries have been closely connected to the aging of this large cohort. The nation has also experienced a boom in education and one in crime. Moreover, the national unemployment rate has a demographic component, as is evident in Table 6. The age group 45 to 54 had a 1981 unemployment rate only about 1/3 that of the age group 20 to 24; 1981 is not atypical in this sense.

Another boom that is closely associated with the aging of the baby-boom cohort and that is not frequently recognized is a migration boom. Table 7 shows that migration rates taper off sharply with age. The interstate migration rate of the age class 45 to 54 is only about 1/3 that of the age class 25 to 29. This is an important point to keep in mind and one that we will consider further below. Let us next turn our attention specifically to Colorado.

Who is migrating to Colorado and in what numbers?

Data from the U.S. Census of Population are in many ways the best to use in answering this question. However, these data have the shortcoming of referring only to 5-year flows, or place of residence in 1975 and place of residence in 1980. Between 1975 and 1980 alone approximately 129,000 more persons moved into Colorado than moved out. As reported in the 1980 Census almost 21 percent of Colorado's population 5 years old and over had moved from another state since 1975. This figure compares to a corresponding national percentage of 9.1. Net migration to Colorado has increased sharply since the 1950s. Between 1955 and 1960 net migration amounted to 59,199 persons. Between 1965 and 1970 it amounted to 77,429 persons, and then increased to 128,685 during the latter half of the 1970s. This figure of 128,685 is the result of 551,339 in-migrants to the state and 422,654 out-migrants from the state. Magnitudes of gross in- and out-migration such as these clearly have the potential to dramatically alter the composition of Colorado's population, even though net migration is only a fraction of gross in- and out-migration.

Colorado's migrants are highly selective with respect to a number of characteristics, and they have in fact significantly altered the demographic composition of the state's population. Probably the most notable characteristic of Colorado's in-migrants is their age. Over 65 percent of all household heads, their spouses, and (primary) individuals living in non-family households who moved to Colorado between 1975 and 1980 were between the ages 20 and 34, compared to only about 33 percent of the state's corresponding on-going residents. Out-migrants tend to have characteristics that are similar to those of the in-migrants, but the strong net migration to Colorado tends to skew the state's age distribution toward younger persons.

Colorado has not been a particularly desirable destination for retired persons. In-migrants 60 and over are greatly under-represented relative to the on-going population. Older out-migrants appear somewhat more frequently than their in-migrant counterparts, but still not nearly as frequently as their counterparts among the on-going residents. If past trends persist well into the future, the massive southward migration that can be expected to occur when the baby-boom generation begins aging into retirement (about 25 years from now) will largely miss Colorado.

The typical Colorado in-migrant is white and well educated. Of those who migrated to the state between 1975 and 1980, almost 92 percent were white. Moreover, 38.8 percent of Colorado's in-migrants had at least 3 years of college, compared to 25.4 percent of the state's on-going population. Partially as a consequence of their age, migrants to Colorado tend to have relatively low incomes. However, because of their relatively high levels of education, future income prospects of the migrants are bright.

In summary, Colorado's typical in-migrant is young, white, well educated, and has a relatively low income, but good prospects for future income. Out-migrants tend to have similar characteristics, but because net-migration is strongly in the direction of Colorado, the state's population composition is being twisted in the direction of the migrants.

Where are Colorado in-migrants coming from and where are Colorado out-migrants going?

The data that allow answers to this question also allow answers to the questions: Why are migrants moving to and from Colorado? Table 8 shows the number of 1975-1980 Colorado net in-migrants who moved from each of the six states that provided Colorado with the most net migrants during the period.

As it was during the 1950s and 1960s, Colorado's gross migration interchange was greater with California than with any other state. However, during the 1970s a dramatic change occurred in Colorado's interaction with California. California switched from being the major destination of net out-migration from Colorado to being one of the major sources of Colorado's net in-migrants. This change was due mainly to a sharp increase in the number of in-migrants that Colorado received from California. Whereas between the late 1960s and the late 1970s Colorado gross out-migration to California increased by about 16 percent, in-migration from California increased by almost 69 percent.

During the 1960s and 1970s, Illinois was the major source of net in-migrants to Colorado. Nebraska and Kansas, which during the 1950s had provided relatively large numbers of migrants to Colorado, steadily slipped down the list during the 1960s and 1970s. Arizona was the primary destination of net out-migrants from Colorado during the 1970s, and during the 1950s and 1960s it ranked second as a destination behind California.

Why does migration to and from Colorado occur?

The most immediate cause of net migration to Colorado is jobs. This relationship is not difficult to understand. The top six sources of Colorado net migrants during the late 1970s were Illinois, New York, California, Ohio, Michigan, and Pennsylvania. As indicated in Table 8, Colorado's annualized rate of employment growth during the 1970s was far higher than that of any of these states. Furthermore, with the exception of California, these states experienced very little employment growth. Four of the six suffered absolute employment declines during the recession of the early 1980s, whereas Colorado continued to experience modest increases in employment. Colorado's unemployment rate, as shown in Table 8, has, moreover, remained below that of most of these other six states.

Job growth in Colorado relative to certain other states is only part of the answer, however. A second important part of the answer lies in the aging of the baby-boom generation. Between 1970 and 1981 the U.S. population aged 20 to 39 increased by almost 22 million persons, or by an average of about 2 million per year. Beginning in the mid to late twenties, migration rates are known to decline sharply with age. For example, nationally the age class 20-to-24 had a 1975-1980 interstate migration rate of 12.9 percent. For the group 25-to-29 the rate was 16.8 percent, but thereafter declined steadily up to retirement age. The group 30-to-34 had an interstate migration rate of 13.8 percent, compared to 9.2 percent for the group 35to-44 and 5.8 percent for the group 45-to-54.

Unemployment also tends to be concentrated among the young. In 1981 the national unemployment rate of the 20-to-24 year old group was 12.3 percent. This rate fell to 7.3 percent for those 25-to-34, to 5.0 percent for those 35-to-44, and to 4.2 percent for those 45-to-54. Thus, many of the states that were the most important sources of Colorado in-migrants had both very low rates of employment growth during the 1970s and very high unemployment rates. Unemployment was, moreover, concentrated among the relatively young. Hence, the large, young, and potentially highly mobile baby-boom generation that was aging into the labor forces of these states was not finding particularly bright job prospects. Consequently, many individuals acted on their incentive to migrate by moving in large numbers to states such as Colorado. Because the baby-boom generation has now almost completely aged into the labor force, Colorado will not have the sizeable mobile population from which to draw migrants much longer, and the volume of migration to Colorado will probably begin to taper off.

Although the availability of desirable climatological and topological amenities has frequently been suggested as an important cause of Colorado's in-migration, little evidence was uncovered in the study to substantiate this position. The availability of more and better job opportunities in Colorado than in many other parts of the country appears to be clearly the major reason for migration to the state. In the Denver metropolitan area 10 additional jobs attract about 3.2 employed migrants, whereas in the Grand Junction region 10 extra jobs attract 5.0 such migrants.

What impacts are migrants having on Colorado?

Migration's impacts on the state are far-reaching. The fact that the migrants tend so strongly to be young adults means that they are in their child-bearing years. Hence, Colorado's population is twisted toward young age classes both because the migrants themselves are young and because their children are born in Colorado rather than in some other state. One implication of this observation is that the demand for education will remain relatively high in Colorado compared to states of net out-migration. The children of Colorado's in-migrants tend to somewhat offset declining enrollments that have resulted from the maturing of the baby-boom generation out of the ages with which educational demands are primarily associated.

For a number of reasons Colorado's in-migrants also affect job opportunities here. They demand locally produced goods and services, and they result in a local investment boom due to their need for housing and social infrastructure, such as roads and schools. In the Denver area 10 additional net in-migrants appear to result in about 12.1 additional jobs, 10 jobs being filled by the migrants and 2.1 by on-going residents. In the Pueblo area 10 migrants result in about 17 extra jobs. Because in many years Pueblo experienced net out-migration, this figure suggests that if 10 employed persons depart from Pueblo, employment declines not only by those 10 jobs, but also by 7 more. Thus, migration has cumulative results that are substantial.

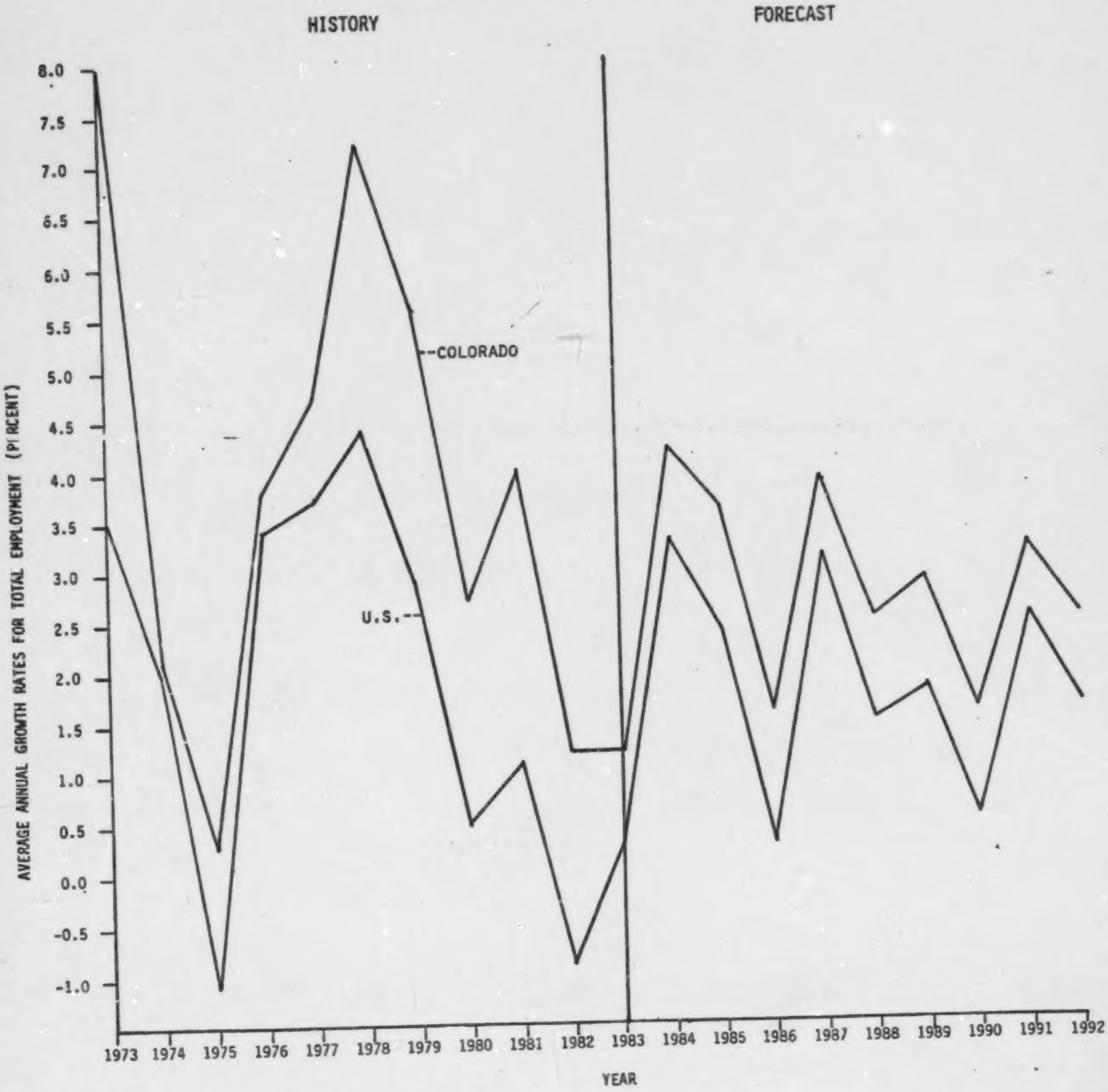
In one sense migration to the Denver area has little impact on area wages, but in another sense the impact is far from trivial. An additional 100 employed net inmigrants to Denver increases the average annual earnings of workers already here by about 59 cents per year. Although this figure seems small, when spread among 508,130 workers, which was the average size of Denver's social-security covered work force between 1958 and 1975, it suggests that 100 employed net in-migrants would mean roughly $299,797 of total incremental earnings for those already here, or approximately $2,998 extra per migrant.

Summary

Over the past decade, the Mountain West, and Colorado in particular, have experienced much higher rates of employment growth than the U.S. as a whole. Much of the growth has been related to the relatively high rates of net in-migration to the region. As the baby-boom generation moves out of the age groups for which migration rates are high, the flow of net in-migration is expected to slow. One effect of this reduced migration flow will be a convergence between the Colorado and national rates of employment growth during the rest of the decade.

The high rates of net migration to the region in the past have resulted in the relative concentration of young persons in the Mountain West and Colorado. These young people are now in their peak child-bearing years, and thus the rate of population growth in the region will continue to exceed that of the nation. Moreover, this group is now entering that part of its life-cycle during which incomes rise most rapidly. As a result, personal income will also continue to increase in the region more rapidly than in the nation as a whole. Hence, those sectors of the economy that are income-dependent and population-serving, namely services, retail trade, and construction, will continue to be the primary sources of employment growth in Colorado for the remainder of the decade.

FIGURE 1


HISTORY
FORECAST
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4.0
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2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
AVERAGE ANNUAL GROWTH RATES FOR TOTAL EMPLOYMENT (PERCENT)
--COLORADO
U.S.--
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
YEAR

TABLE 1

Selected Economic Indicators: November 1983 Colorado Forecast, 1983-1992

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Wage and Salary Employment	1426,425	1485,644	1538,956	1563,519	1624,051	1664,070	1711,656	1738,802	1794,881	1839,744
(% rate of growth)	(1.2)	(4.2)	(3.6)	(1.6)	(3.9)	(2.5)	(2.9)	(1.6)	(3.2)	(2.5)
Manufacturing	177,348	187,915	195,501	191,906	200,035	201,634	202,826	199,167	204,840	205,588
(% rate of growth)	(-2.2)	(6.0)	(4.0)	(-1.8)	(4.2)	(0.8)	(0.6)	(-1.8)	(2.8)	(0.4)
Durable	115,507	125,348	132,952	130,712	138,274	140,488	142,336	139,778	145,037	146,464
(% rate of growth)	(-2.3)	(8.5)	(6.1)	(-1.7)	(5.8)	(1.6)	(1.3)	(-1.8)	(3.8)	(1.0)
Nondurable	61,841	62,568	62,550	61,195	61,761	61,146	60,490	59,389	59,803	59,125
(% rate of growth)	(1.4)	(1.2)	(0.0)	(-2.2)	(0.9)	(-1.0)	(-1.1)	(-1.8)	(0.7)	(-1.1)
Nonmanufacturing	1229,567	1277,581	1322,815	1350,912	1402,677	1440,773	1486,767	1517,467	1567,311	1611,072
(% rate of growth)	(1.4)	(3.9)	(3.5)	(2.1)	(3.8)	(2.7)	(3.2)	(2.1)	(3.3)	(2.8)
Mining	40,632	42,423	43,392	44,471	46,408	47,481	48,196	48,989	50,369	50,981
(% rate of growth)	(-9.0)	(4.4)	(2.3)	(2.5)	(4.4)	(2.3)	(1.5)	(1.6)	(2.8)	(1.2)
Contract Construction	82,885	91,557	98,322	95,748	99,339	101,147	101,821	100,388	103,656	105,515
(% rate of growth)	(3.3)	(10.5)	(7.4)	(-2.6)	(3.8)	(1.8)	(0.7)	(-1.4)	(3.3)	(1.8)
Transpor. & Publications	80,494	85,339	87,372	87,151	88,872	89,896	90,923	89,919	91,740	92,498
(% rate of growth)	(-2.5)	(6.0)	(2.4)	(-0.2)	(2.0)	(1.2)	(1.1)	(-1.1)	(2.0)	(0.8)
Finance, Insur.,& Real Estate	90,436	94,606	97,439	99,305	102,398	106,112	110,018	112,925	115,856	119,981
(% rate of growth)	(3.0)	(4.6)	(3.0)	(1.9)	(3.1)	(3.6)	(3.7)	(2.6)	(2.6)	(3.6)
Retail Trade	246,566	254,180	263,705	269,435	279,598	288,396	297,082	302,805	313,307	322,488
(% rate of growth)	(2.0)	(3.0)	(3.8)	(2.2)	(3.8)	(3.1)	(3.0)	(1.9)	(3.5)	(2.9)
Wholesale Trade	81,375	83,781	86,703	88,370	91,542	94,219	96,817	98,453	101,646	104,336
(% rate of growth)	(0.0)	(3.0)	(3.5)	(1.9)	(3.6)	(2.9)	(2.8)	(1.7)	(3.2)	(2.6)
Services	311,658	327,264	343,999	355,256	373,183	387,950	403,060	415,790	432,508	447,528
(% rate of growth)	(3.4)	(5.0)	(5.1)	(3.3)	(5.0)	(4.0)	(3.9)	(3.2)	(4.0)	(3.5)
Government	295,421	298,430	301,884	311,175	321,341	325,571	338,850	348,197	358,230	367,744
(% rate of growth)	(1.2)	(1.0)	(1.2)	(3.1)	(3.3)	(1.3)	(4.1)	(2.8)	(2.9)	(2.6)
Total Real Output (Billion $: 1972=100)	32.793	34.624	36.512	37.562	39.604	41.357	42.945	43.984	46.141	45.836
(% rate of growth)	(2.8)	(5.6)	(5.4)	(2.9)	(5.4)	(4.4)	(3.8)	(2.4)	(4.9)	(4.2)
U.S. % rates of growth	3.5	5.8	3.6	0.5	4.5	2.8	2.8	0.4	4.1	2.7
Wage and Salary (Billion $)	26.004	28.531	31.720	34.273	37.992	41.631	45.761	49.296	54.393	59.668
(% rate of growth)	(7.7)	(9.7)	(11.2)	(8.0)	(10.9)	(9.6)	(9.9)	(7.7)	(10.3)	(9.7)
Total Personal Income (Billion $)	39.428	43.555	48.397	52.520	58.043	63.467	69.624	75.003	82.372	89.862
(% rate of growth)	(8.2)	(10.5)	(11.1)	(8.5)	(10.5)	(9.3)	(9.7)	(7.7)	(9,8)	(9.1)
Population	3151.911	3232.287	3307.497	3396.825	3488.891	3567.257	3654.269	3738.764	3825.938	3903.745
(% rate of growth)	(3.3)	(2.6)	(2.3)	(2.7)	(2.7)	(2.2)	(2.4)	(2.3)	(2.3)	(2.0)

SOURCE: Center for Economic Analysis, University of Colorado, Boulder, Colorado, Colorado Forecasting and Simulation Model; Wharton Econometric Forecasting Associates, 1984.

TABLE 2

Shares of Colorado Employment Accounted for by Major Industries, 1970-1990

	1970	1975	1980	1985	1990
Manufacturing	0.135	0.128	0.134	0.127	0.114
Durable	0.079	0.076	0.087	0.086	0.080
Nondurable	0.056	0.053	0.047	0.041	0.034
Mining	0.016	0.018	0.027	0.028	0.028
Contract Construction	0.051	0.050	0.057	0.064	0.058
Transportation & Public Utilities	0.060	0.056	0.058	0.057	0.052
Finance, Insurance, and Real Estate	0.048	0.054	0.060	0.063	0.065
Retail Trade	0.160	0.169	0.172	0.171	0.174
Wholesale Trade	0.052	0.054	0.056	0.056	0.057
Services	0.178	0.194	0.205	0.223	0.239
Agriculture	0.023	0.017	0.015	0.013	0.013
Government	0.276	0.259	0.215	0.196	0.200
State and Local	0.152	0.159	0.142	0.130	0.139
Federal	0.125	0.100	0.073	0.066	0.061
Total	1.000	1.000	1.000	1.000	1.000

Source: Center for Economic Analysis, University of Colorado, Boulder, Colorado Forecasting and Simulation Model, 1984

TABLE 3

Colorado Rates of Growth Relative to Corresponding U.S. Rates of Growth, by Industry, 1970-1990

	1970-1975	1975-1980	1980-1985	1985-1990
Manufacturing	1.241	1.191	1.101	1.041
Durable	1.244	1.271	1.148	1.059
Nondurable	1.235	1.067	1.012	0.989
Mining	1.149	1.337	1.193	1.081
Contract Construction	1.199	1.184	1.229	1.065
Transportation & Public Utilities	1.143	1.154	1.100	1.030
Finance, Insurance, and Real Estate	1.220	1.142	1.080	1.048
Retail Trade	1.173	1.086	1.085	1.046
Wholesale Trade	1.105	1.105	1.077	1.034
Services	1.149	1.087	1.091	0.990
Agriculture	0.830	1.132	0.945	1.185
Government	1.055	0.991	1.062	1.050
State and Local	1.075	1.044	1.075	1.079
Federal	1.087	0.916	1.032	1.000
Total	1.152	1.099	1.095	1.039

Source: Center for Economic Analysis, University of Colorado, Boulder, Colorado Forecasting and Simulation Model, 1984

TABLE 4

Industry-Specific Employment Shares: Colorado Relative to U.S., 1970-1990

	1970	1975	1980	1985	1990
Manufacturing	0.546	0.587	0.638	0.641	0.640
Durable	0.552	0.598	0.685	0.717	0.733
Nondurable	0.538	0.588	0.559	0.526	0.492
Mining	2.000	2.000	2.454	2.800	2.800
Contract Construction	1.133	1.190	1.266	1.422	1.487
Transportation & Public Utilities	1.052	1.037	1.094	1.096	1.083
Finance, Insurance, and Real Estate	1.000	1.058	1.091	1.086	1.083
Retail Trade	1.095	1.119	1.102	1.089	1.101
Wholesale Trade	1.083	1.018	1.018	1.000	1.018
Services	1.005	1.005	0.990	0.986	0.940
Agriculture	1.437	1.062	1.071	0.928	1.083
Government	1.339	1.227	1.102	1.071	1.086
State and Local	1.169	1.089	1.028	1.016	1.053
Federal	1.644	1.538	1.280	1.222	1.173
Total	1.000	1.000	1.000	1.000	1.000

Source: Center for Economic Analysis, University of Colorado, Boulder, Colorado Forecasting and Simulation Model, 1984

TABLE 5

Age Structure of U.S. Population, July 1, 1981, and April 1, 1970

	Population (in thousands)		Percent Distribution		Population Change	
Age	1981	1970	1981	1970	Number	Percent
All ages	229,807	204,401	100.0	100.0	25,406	12.4
under 5	16,939	17,167	7.4	8.4	-228	-1.3
5 to 9 years	16,045	19,974	7.0	9.8	-3,929	-19.7
10 to 14 years	18,241	20,809	7.9	10.2	-2,568	-12.3
15 to 19 years	20,433	19,191	8.9	9.4	1,242	6.5
20 to 24 years	21,938	17,037	9.5	8.3	4,901	28.8
25 to 29 years	20,173	13,630	8.8	6.7	6,543	48.0
30 to 34 years	18,804	11,523	8.2	5.6	7,280	63.2
35 to 39 years	14,449	11,194	6.3	5.5	3,255	29.1
40 to 44 years	12,061	12,026	5.2	5.9	35	0.3
45 to 49 years	10,990	12,142	4.8	5.9	-1,152	-9.5
50 to 54 years	11,546	11,120	5.0	5.4	427	3.8
55 to 59 years	11,600	9,983	5.0	4.9	1,617	16.2
60 to 64 years	10,335	8,626	4.5	4.2	1,709	19.8
65 to 69 years	8,880	6,998	3.9	3.4	1,881	26.9
70 to 74 years	7,013	5,449	3.1	2.7	1,564	28.7
75 to 79 years	4,914	3,838	2.1	1.9	1,076	28.0
80 to 84 years	3,085	2,286	1.3	1.1	799	34.9
85 years and over	2,362	1,409	1.0	0.7	953	67.7
Median years	30.3	27.9	---	---	---	---

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 374, "Population Profile of the United States: 1981" (Washington, D.C.: U.S. Government Printing Office, 1982), Table 3-1.

TABLE 6

Relationship between Age and Unemployment, United States, 1981

Age	Unemployment rate
20-24	12.3%
25-34	7.3
35-44	5.0
45-54	4.2

TABLE 7

Relationship between Age and Migration, United States

Age	1975-80 interstate migration rate
20-24	12.9%
25-29	16.8
30-34	13.8
35-44	9.2
45-54	5.8

TABLE 8

Major Source States of Colorado Net Migration, Annualized Rates of Growth of Nonagricultural Employment, 1970-80 and 1980-82, and Unemployment Rates, 1980 and 1983, Colorado and Other States

	1975-1980 Net Migration to Colorado from	Rate of growth of nonagricultural employment		Unemployment rate	
		1970-80	1980-82	Average 1980	January 1983
COLORADO		**5.2%**	**2.4%**	**5.6%**	**9.5%**
Illinois	22,426	1.1	-2.7	8.3	13.5
New York	18,955	0.1	0.2	7.6	9.6
California	13,515	3.6	0.0	6.8	11.7
Ohio	11,685	1.2	-2.7	8.4	14.9
Michigan	11,098	1.4	-3.8	12.6	17.0
Pennsylvania	9,143	0.9	-2.0	7.8	14.9

UTAH

The Utah Economic Recovery

of 1983-84

by

Douglas A. Macdonald
Tax Economist
Utah State Tax Commission

The author wishes to thank R. Thayne Robson, Director, Bureau of Economic and Business Research, University of Utah for his helpful comments and his analysis of population trends. Also critical in preparing this paper was data prepared by the Labor Market Information Bureau of the Utah Department of Employment Security. The forecasts made in this document do not necessarily represent the views of the Utah State Tax Commission or the Utah Office of Planning and Budget.

March 1984

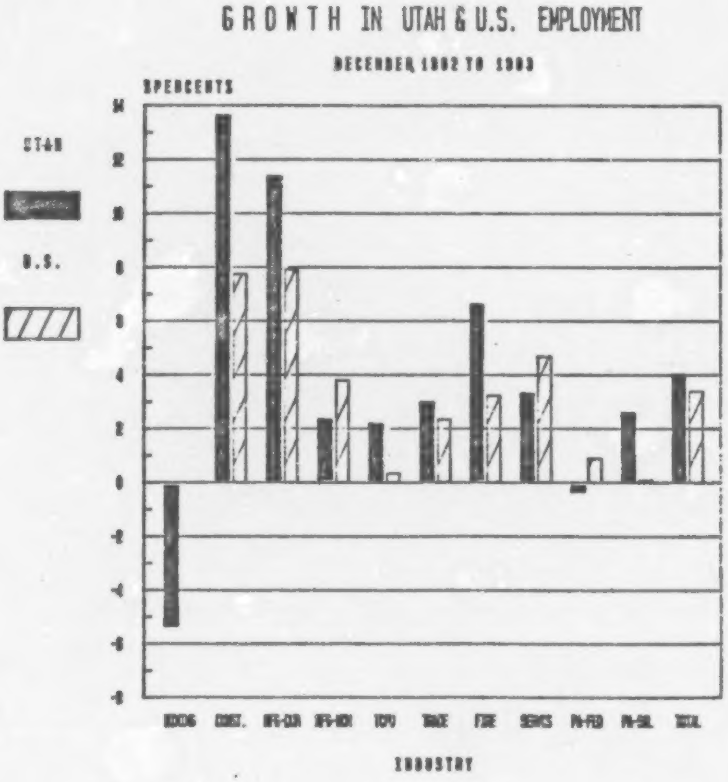
SUMMARY

The Utah economy clearly did not recover from the 1981 - 1982 recession until the middle of 1983. To some extent the weather played a key role in inhibiting economic performance, bringing spot flooding and mudslides which dampened spring buying and economic activity. Certainly the great landslide at Thistle, Utah which cut off railroad and highway transportation from the coal fields to the west increased unemployment in that area of the state. Soft oil and uranium prices as well as decreasing copper prices kept unemployment high in the other mining sectors. The year over year average of employment growth in 1983 was only 1 percent, but December, 1982 to December, 1983 employment (Chart 1) rose 4 percent. Retail sales, also did not show much improvement until the second and third quarters of 1983 when they grew 7.5 and 11.9 percent respectively.

The driving forces behind the 1983-84 Utah recovery are the significant increases in defense related manufacturing employment, power plant and housing construction, average growth in an expanding services sector, and local education employment.

Employment in Utah in 1984 will increase at a 3.5 percent rate, creating 20,000 jobs. Non-agricultural wages and saleries should increase 9.2 percent as average compensation per job increases 5.5 percent coupled with a 3.5 percent increase in jobs (Chart 2). Likewise, personal income will increase .9 percent in 1984 as increases in non-farm proprietor's income and social insurance taxes offset each other. Retail sales, services, and business equipment purchases will increase about 11.5 percent in 1984, following a 7.5 percent gain in 1983. The economic pain felt by Utah's mining industry will continue in 1984, where the recovery will be minimal and spotty. Bolstering Utah wages and salaries will be continuing growth in defense and NASA contracts, the expanding service sector including ski related tourism, business services, and health research and finally local education due to continued, high birthrates.

Chart 1



Over the next five years population will grow about 2.5 percent per year compared to the 3.3 percent compounded annual growth rate experienced in the 1970's. Employment growth will probably average between 2 and 3 percent in the 1980's compared to the 6 percent growth rates experienced in the last decade. During the first four years since 1980, even assuming our 1984 forecast, employment growth will only be 1.4 percent per year. Thus, even if the mining industry maintains very modest growth rates in the middle and late 1980's, defense and space related manufacturers, the leading edge in medical technology, expansion in recreation and business services and keeping up with expanding residentiary demands will induce real personal income growth of about 4 to 5 percent per year in the 1980's. This compares with 5.5 percent real personal income growth between 1970 and 1980 and about a 3.8 percent real growth rate between 1980 and 1984.

Chart 2

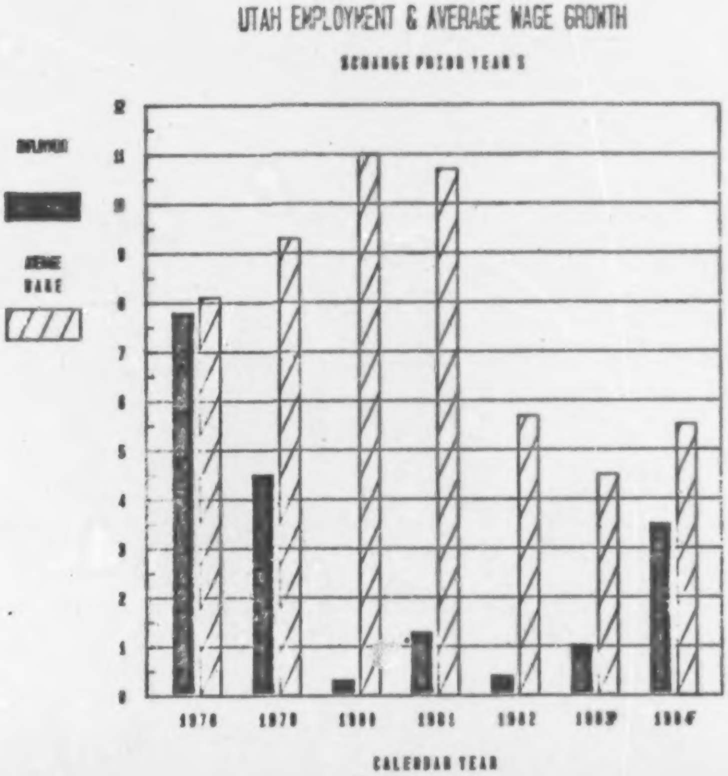


TABLE 1

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                                   ***  U T A H  ***                         11:18 THURSDAY, MARCH 8, 1984     1
                        EMPLOYMENT, WAGES & TAXES FOR 1981 THROUGH 1984



OBS  INDICATOR                    UNITS     ACTUAL    ACTUAL    ESTIMATE   FORECAST   PERCENT    PERCENT    PERCENT
                                            1981      1982      1983       1984       CHANGE     CHANGE     CHANGE
                                                                                      81 TO 82   82 TO 83   83 TO 84

  1  ** UTAH EMPLOYMENT           K          558.4     559.3     565.0      585.0       0.2        1.0        3.5
  2  *  MINING                    K           20.4      18.2      13.9       14.5     -10.8      -23.6        4.3
  3  *  CONSTRUCTION              K           28.3      26.9      28.6       32.0      -4.9        6.3       11.9
  4  *  MANUFACTURING             K           89.3      85.7      85.3       90.0      -4.0       -0.5        5.5
  5  *  TRAN,COM,PUBUTIL          K           34.5      35.5      35.9       37.0       2.9        1.1        3.1
  6  *  TRADE                     K          130.9     131.6     133.3      135.5       0.5        1.3        1.7
  7  *  FIN,INS,REALEST           K           26.3      26.6      28.1       29.0       1.1        5.6        3.2
  8  *  SERVICES                  K          103.8     108.3     111.3      115.0       4.3        2.8        3.3
  9  *  GOVERNMENT                K          124.9     126.5     128.7      132.0       1.3        1.7        2.6
 10  *************************                  .         .          .          .         .          .          .
 11  ** UTAH WAGES & SALARIES                    .         .          .          .         .          .          .
 12  **  AVG. NONAG WAGE          DOLLAR     14774     15612      16310      17207       5.7        4.5        5.5
 13  **  TOTAL NONAG WAGES        $ MIL     8250.0    8735.0     9215.0      10066       5.9        5.5        9.2
 14  **  U.S. DISP.INCOME RATE    PERCENT     83.9      84.5       85.3       85.1       0.7        0.9       -0.2
 15  **  REAL DISP.NONAG WAGES    $ MIL     3547.0    3567.0     3644.0     3783.0       0.6        2.2        3.8
 16  **************************                  .         .          .          .         .          .          .
 17  ** UTAH PERSONAL INCOME      $ MIL      12854     13788      14630      15941       7.3        6.1        9.0
 18  **  WAGE & SALARY DISB.      $ MIL     8455.0    8972.0     9402.0      10270       6.1        4.8        9.2
 19  **  OTHER LABOR INCOME       $ MIL      754.0     855.0      930.0      986.0      13.4        8.8        6.0
 20  **  PROPRIETORS-FARM         $ MIL       81.0      46.0       43.0       56.0     -43.2       -6.5       30.2
 21  **  PROPRIETORS-NON FARM     $ MIL      506.0     493.0      661.0      740.0      -2.6       34.1       12.0
 22  **  LESS:SOCIAL INSURANCE    $ MIL     -674.0    -727.0     -763.0     -855.0       7.9        5.0       12.1
 23  **  RESIDENCE ADJUSTMENT     $ MIL       14.0      15.0       16.0       16.0       7.1        6.7        0.0
 24  **  DIVIDNDS,INTERST,RENT    $ MIL     2122.0    2329.0     2375.0     2568.0       9.8        2.0        8.1
 25  **  TRANSFER PAYMENTS        $ MIL     1595.0    1805.0     1966.0     2160.0      13.2        8.9        9.9
 26  **************************   FISCAL         .         .          .          .         .          .          .
 27  ** STATE TAX COLLECTIONS     YEAR      8182.0    8283.0     8384.0     8485.0         .          .          .
 28  **                                          .         .          .          .         .          .          .
 29  SALES & USE TAXES            $ MIL      385.3     388.7      461.0      530.0       0.9       18.6       15.0
 30  SALES TAX SPEEDUP            $ MIL          .         .       40.0        0.0         .          .       -100
 31  INDIVIDUAL INCOME TAXES      $ MIL      330.8     348.0      380.0      415.6       5.2        9.2        9.4
 32  CORPORATE INCOME TAXES       $ MIL       40.9      33.8       39.5       54.0     -17.4       16.9       36.7
 33  MOTOR FUEL TAXES             $ MIL       67.7      68.7       68.5       85.7       1.5       -0.3       25.1
```

12:50 THURSDAY, MARCH 8, 1984

TABLE 2

*** UTAH & UNITED STATES ***
ECONOMIC INDICATORS FOR 1983 AND 1984

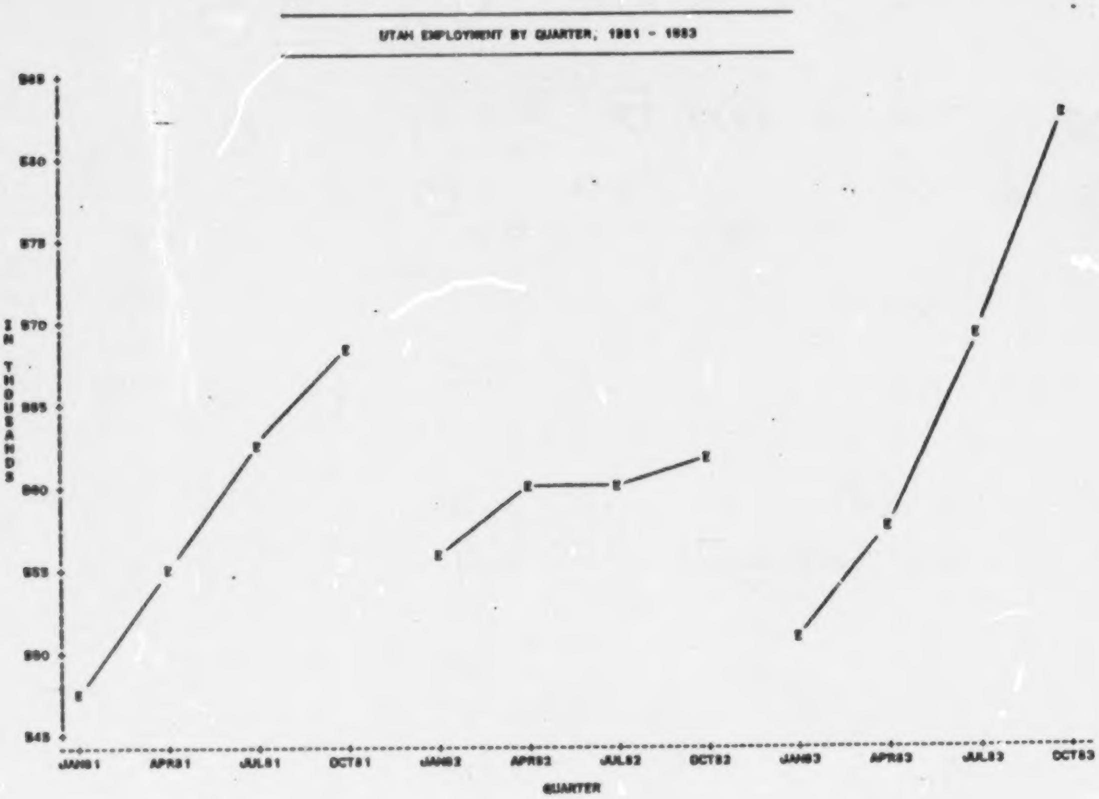
PRODUCTION, CONSUMER, PRICES, FINANCING INDICATORS

OBS	ECONOMIC INDICATORS	UNITS	ACTUAL CY1981	ACTUAL CY1982	PRELIM ACTUAL CY1983	PRELIM FORECAST CY1984	% CHANGE 81-82	% CHANGE 82-83	% CHANG 83-84
1	** PRODUCTION	"							
2	**		.	.	.	.	.	.	.
3	U.S. REAL GNP	1972$	1503.00	1485.00	1536.00	1613.00	-1.2	3.4	5.0
4	" STEEL & MILL PROD.	1967=100	102.30	62.20	76.90	87.10	-39.2	23.6	13.3
5	" NEW CARS & TRUCKS	MIL	8.50	8.00	9.40	10.80	-5.9	17.5	14.9
6	" HOUSING STARTS	MIL	1.10	1.08	1.75	1.70	-1.8	62.0	-2.9
7	" MFG PLANT&EQUIP EXP	$ BIL	126.80	119.70	111.40	129.60	-5.6	-6.9	16.3
8	UTAH COAL PRODUCTION	M TONS	14.60	17.60	14.00	14.00	20.5	-20.5	0.0
9	" OIL PRODUCTION	M BBL	26.80	26.70	28.00	30.00	-0.4	4.9	7.1
10	" DWELLING UNITS	THOUS	9.30	7.70	14.70	16.00	-17.2	90.9	8.8
11	" RESIDENTIAL CONST.	$ MIL	452.00	348.00	657.00	680.00	-23.0	88.8	3.5
12	" NON-RES. CONST.	$ MIL	478.00	444.00	321.00	362.00	-7.1	-27.7	12.8
13	**								
14	** CONSUMER INDICATORS		.	.	.	.	.	.	.
15	**								
16	UTAH BIRTHS	THOUS	41.40	41.50	39.40	41.00	0.2	-5.1	4.1
17	" DEATHS	THOUS	-8.30	-8.50	-8.50	-8.70	2.4	0.0	2.4
18	" NET MIGRATION	THOUS	13.00	7.00	-3.40	7.70	-46.2	-149	-326
19	" POPULATION	THOUS	1520.00	1560.00	1587.50	1627.50	2.6	1.8	2.5
20	" MARRIAGE & DIVORCES	THOUS	26.00	26.80	26.30	27.50	3.1	-1.9	4.6
21	U.S. CONSUMER SENTIMENT	1966=100	73.00	68.00	87.40	86.10	-6.8	28.5	-1.5
22	" RETAIL SALES	$ BIL	87.30	89.50	98.60	108.10	2.5	10.2	9.6
23	UTAH GROSS TAXABLE SALES	$ MIL	9857.00	10020.00	10780.00	12018.00	1.7	7.6	11.5
24	**		.	.	.	.	.	.	.
25	** PRICES								
26	**		.	.	.	.	.	.	.
27	U.S. COMPENSATION/HOUR	1977=100	145.90	158.30	167.80	177.10	8.5	6.0	5.5
28	" PRODUCTIVITY/HOUR	"	105.20	106.60	113.10	118.30	1.3	6.1	4.6
29	"	"	.	.	.	.	.	.	.
30	U.S. GNP DEFLATOR	1972=100	195.10	206.90	215.70	226.40	6.0	4.3	5.0
31	" C.P.I.,DECEMBER	1967=100	281.50	293.30	303.50	321.10	4.2	3.5	5.8
32	" COPPER PRICES(DOMREF)	$PERLB	0.84	0.73	0.77	0.72	-13.1	5.5	-6.5
33	UTAH CRUDE OIL PRICES	$PERBBL	33.80	30.80	30.00	28.50	-8.9	-2.6	-5.0
34	" REG&UNLEAD GAS FY	$PERGAL	1.33	1.24	1.20	1.26	-6.8	-3.2	5.0
35	**		.	.	.	.	.	.	.
36	** FINANCING								
37	**		.	.	.	.	.	.	.
38	M-2	$ BIL	1794.90	1959.50	2214.70	2410.40	9.2	13.0	8.8
39	U.S. CORPORATE PROFITS	$ BIL	227.00	174.20	211.70	260.20	-23.3	21.5	22.9
40	FED. BUDGET DEFICIT	$ BIL	60.00	149.50	186.70	172.00	149.2	24.9	-7.9
41	BANK PRIME RATE	PERCENT	18.87	14.86	10.79	11.57	-21.3	-27.4	7.2
42	U.S. 90 DAY T BILLS	PERCENT	14.08	12.18	8.61	9.08	-13.5	-29.3	5.5
43	NEW HOME CONV MORT RATES	PERCENT	14.17	14.47	12.40	12.60	2.1	-14.3	1.6
44	CONSUMER INSTAL. EXTEN	$ BIL	332.30	343.30	377.60	417.00	3.3	10.0	10.4

EMPLOYMENT

As seen in Chart 3 Utah non-agricultural employment took off in the third quarter of 1983 after six prior quarters of declining or flat growth. Solid employment gains during 1981 were quickly squelched as Utah belatedly entered the recession during the first quarter of 1982. Utah employment hit bottom during the fourth quarter of 1982 and the first quarter of 1983. The growth rate in employment during the third and fourth quarters of 1983 not only has a steeper slope than the 1981 boom year, but is the fastest growth rate in decades.

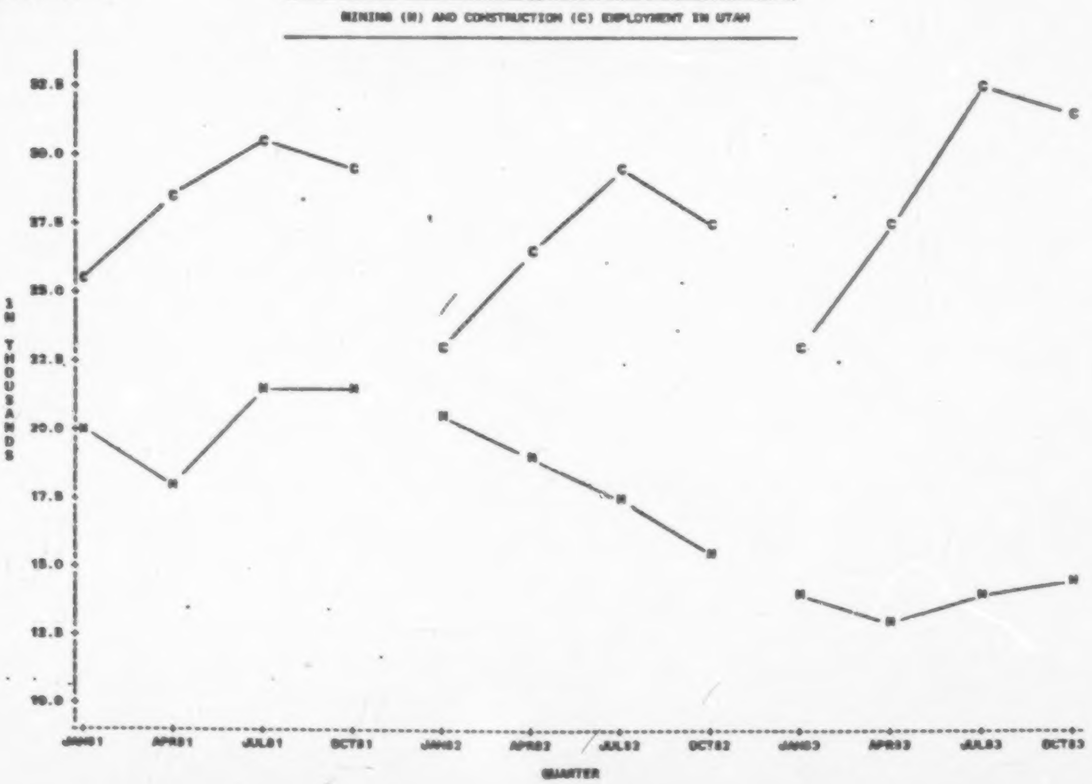
Chart 3



Mining

Employment in Utah's mining industry peaked in 1981 at 20,300 (Chart 4). The average price per barrel of Utah oil also peaked that year at $33.80. Taxable purchases by coal companies, oil and gas extractors and non-metallic mineral firms (except coal) rose from $98.6 million in 1980 to $186.6 million in 1981, up 89 percent. The oil exploration boom occurred along the northeastern corner of the state which borders Colorado and Wyoming. In 1981 a large oil field, Anschutz, was discovered along the Overthrust belt in Summit County which is expected to produce 5 to 10 million barrels per year in 1984. Production from this field is expected to offset natural decline in the state's older, large fields. Utah oil production might reach 30 million barrels in 1984, valued at $28.50 per barrel (Table 2).

Chart 4



After OPEC dropped its oil prices in early 1983 to $29.00 per barrel drilling fell 27 percent sending Uintah, Duchesne, and Daggett Counties bordering Colorado into a bust. In addition, by 1982 copper prices dropped to 73 cents per pound from $1.03 per pound in 1980 forcing Kennecott Copper to lay off 2,400 workers, reducing its force by about 34 percent to 4,600.

Further reductions in mining employment occurred in 1983 as coal production, which reached an all time high in 1982 at 17.6 million tons, dropped precipitously (32 percent) to about 14 million tons in 1983. Soft demand for uranium and steel forced employment cutbacks in those industries as well.

Although it appears that mining employment stabilized in 1983 at about 15,000 jobs it is evident that the current U.S. recovery has done little to stimulate the specific mining sectors in Utah, except perhaps to stabilize further decline.

Construction

In contrast to the mining industry, construction employment rebounded smartly (Chart 4) during 1983. Dwelling unit permits rose 91 percent in 1983 to 14,664. Single family permits rose 84.5 percent, but multiple family units increased a whopping 122 percent. Residential construction value increased a substantial 89 percent in 1983, more than offsetting a 28 percent decline in nonresidential permit value. Significant retail floor space as well as commercial office space added in the early 1980's has kept vacancy rates high enough to warrant only a modest, if any growth in nonresidential construction value in 1984. But nonresidential permit value is incomplete in the sense that two large coal-fired power projects are expending vast amounts of construction monies, some of which filtered through the Utah economy in 1983. The Intermountain Power Project (IPP) located in the vast, central part of the state expended $502 million in 1983 on construction, substantially greater than the $159 million expended in 1982. Employment at IPP increased from 634 jobs in December, 1982 to 2,340 in November, 1983 and should peak in 1984 at about 3,200. The Bonanza Power Plant in Uintah County in the northeastern corner of the state bordering Colorado expended about $200 million in 1983. In total these two power plants expended more than double the permit value of other nonresidential projects in the state, assisting in the growth of total nonresidential construction employment.

Manufacturing

Manufacturing employment in 1983 rebounded strongly in 1983, but unlike construction, has not risen to the heights realized in 1981 (Chart 5). Not unlike other states in 1982 manufacturing employment dropped 7.7 percent between the first quarter of 1982 and first quarter of 1983 - losing some 6,700 jobs. About 2,400 of those job losses were in primary metals and related to the Kennecott layoffs. Another 1,700 jobs were lost to workers employed with U.S. Steel in Utah County. Except for transportation equipment sector which includes the Utah divisions, Morton Thiokol Inc. and Hercules Inc., declines in the other manufacturing sectors were widespread. Chemical and petroleum product employment dropped 600 jobs, down 14.6

percent. Most of the other sectors declined between 5 and 10 percent during 1982.

Chart 5

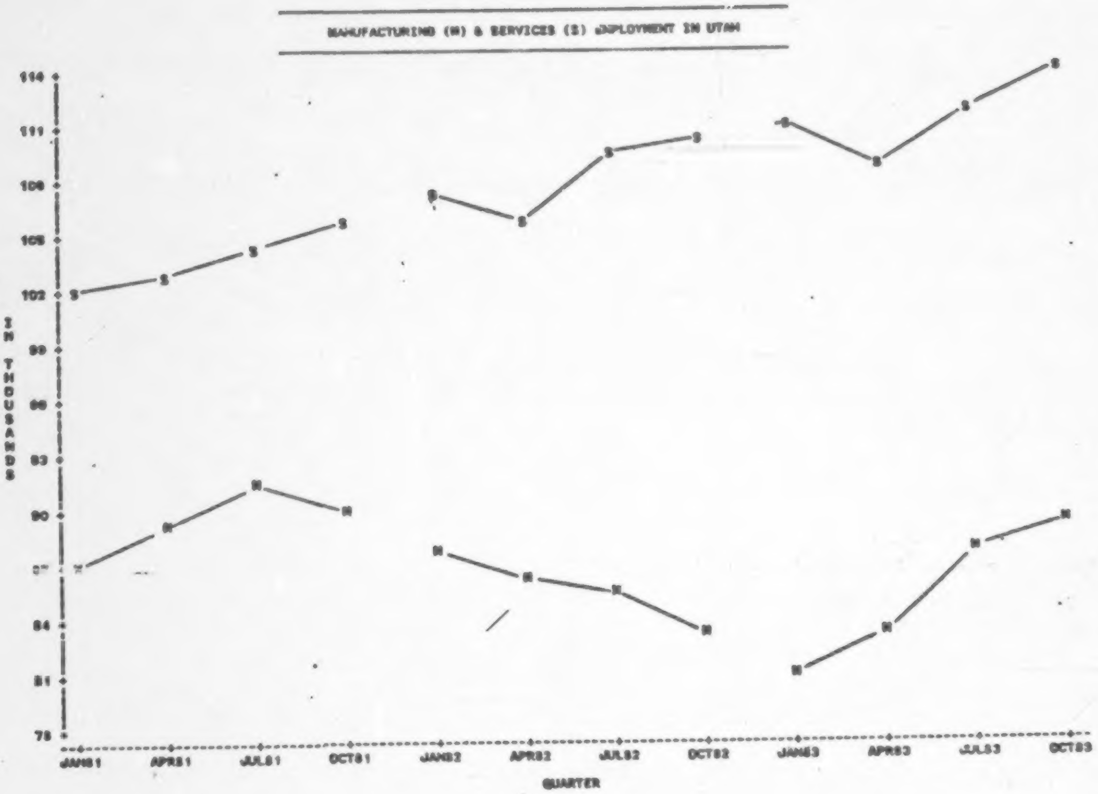


Table 3

UTAH'S LARGEST EMPLOYERS - FOURTH QUARTER 1983

RANK	SIC*	NAME	EMPLOYMENT RANGE
1	9711	U.S. HILL AIR FORCE BASE	10,000 and OVER
2	8221	BRIGHAM YOUNG UNIVERSITY	10,000 and OVER
3	8221	UNIVERSITY OF UTAH (INCL. HOSPITAL)	10,000 and OVER
4	8211	GRANITE SCHOOL DISTRICT	6,000 to 6,999
5	4811	MOUNTAIN BELL	6,000 to 6,999
6	1021	KENNECOTT INC.	5,000 to 5,999
7	8211	JORDAN SCHOOL DISTRICT	5,000 to 5,999
8	3724	MORTON - THIOKOL	5,000 to 5,999
9	3573	SPERRY CORPORATION	4,000 to 4,999
10	5311	ZCMI	4,000 to 4,999
11	4911	UTAH POWER & LIGHT CO.	3,000 to 3,999
12	9711	U.S. TOOELE ARMY DEPOT	3,000 to 3,999
13	9199	SALT LAKE COUNTY	3,000 to 3,999
14	3312	U.S. STEEL CORPORATION	3,000 to 3,999
15	8221	UTAH STATE UNIVERSITY	3,000 to 3,999
16	3728	HERCULES INC.	3,000 to 3,999
17	8211	DAVIS COUNTY SCHOOL DISTRICT	3,000 to 3,999
18	4311	U.S. POST OFFICE	3,000 to 3,999
19	8211	SALT LAKE SCHOOL DISTRICT	3,000 to 3,999
20	8211	ALPINE SCHOOL DISTRICT	2,000 to 2,999
21	6025	FIRST SECURITY BANK OF UTAH	2,000 to 2,999
22	9311	U.S. INTERNAL REVENUE SERVICE	2,000 to 2,999
23	4011	UNION PACIFIC RAILROAD	2,000 to 2,999
24	8062	LDS HOSPITAL	2,000 to 2,999
25	5912	GRAND CENTRAL INC.	2,000 to 2,999
26	8211	WEBER COUNTY SCHOOL DISTRICT	2,000 to 2,999
27	5411	SMITH'S FOOD KING	2,000 to 2,999
28	5411	ALBERTSON'S	2,000 to 2,999
29	9199	SALT LAKE CITY CORPORATION	2,000 to 2,999
30	3841	DESERET MEDICAL INC.	2,000 to 2,999
31	8221	WEBER STATE COLLEGE	2,000 to 2,999
32	4923	MOUNTAIN FUEL SUPPLY CO.	1,000 to 1,999
33	9621	UTAH DEPARTMENT OF TRANSPORTATION	1,000 to 1,999
34	3679	NATIONAL SEMICONDUCTOR CORP.	1,000 to 1,999
35	9711	U.S. DEFENSE DEPOT - OGDEN	1,000 to 1,999
36	5411	SAFEWAY STORES	1,000 to 1,999
37	5311	J.C. PENNY CO. INC.	1,000 to 1,999
38	5311	SEARS ROEBUCK & CO.	1,000 to 1,999
39	8062	HOLY CROSS HOSPITAL	1,000 to 1,999
40	8062	VETERANS ADMINISTRATION HOSPITAL	1,000 to 1,999

*Standard Industrial Classification

SOURCE: Utah Department of Employment Security, Labor Market Information Service, February 1984.

Because Department of Defense prime contract awards to Utah firms increased 61 percent in 1981, 39 percent in 1982, and 29 percent more in 1983 to over $722 million, defense manufacturers hired on an additional 2,000 workers. Morton Thiokol a producer of jet fuel and other products and Hercules, Inc., which produces graphite and other rocket parts are now becoming two of the chief private sector employers in the state (Table 3). The transportation equipment manufacturing sector's 21 percent (December to December) gain in 1983 was closely followed by the 18 percent gain in other durable goods manufacturing and the 15 percent increase in electrical equipment and supplies employment. Two large employers located in this sector are the Sperry Corporation and National Semiconductor. Sperry recently received a five year contract amounting to $433 million to build shipboard computers for the U.S. Navy. The entire manufacturing sector rose 8.5 percent from December, 1982 to December, 1983. Job declines, however, occurred in primary metals (copper, steel), food products, and in the refineries (chemical and petroleum products).

Services

In contrast to the manufacturing sector, Utah's service sector has proceeded along an upward slope since 1981 (Chart 4) with only a little trace of recessionary slippage. Service employment grew 3.3 percent from December, 1982 to December, 1983, with personal business and amusement employment growing 4.4 percent. Employment by hotels and other lodging places grew 10 percent in 1983 as several national chains have recently set up shop in Salt Lake City (Hilton, Sheraton, Marriott) since 1981. Western Airline's decision to make Salt Lake City one of its major hubs has provided better access to Utah. The International Airport's 30 to 45 minute drive to all of the major ski resorts has been a major factor in promoting lift sales and condominium growth to East and West Coast skiers. The 2.3 percent growth in medical and other health services employment represents that industry's response to Utah's continued population growth as well as Utah's intermountain health care specialties. A host of high technology medical research firms are beginning to sprout relative to the University of Utah's artificial organs. Researchers are beginning to market artificial kidneys, ears, disposable nerves, blood vessels, at the University of Utah's Research Park.

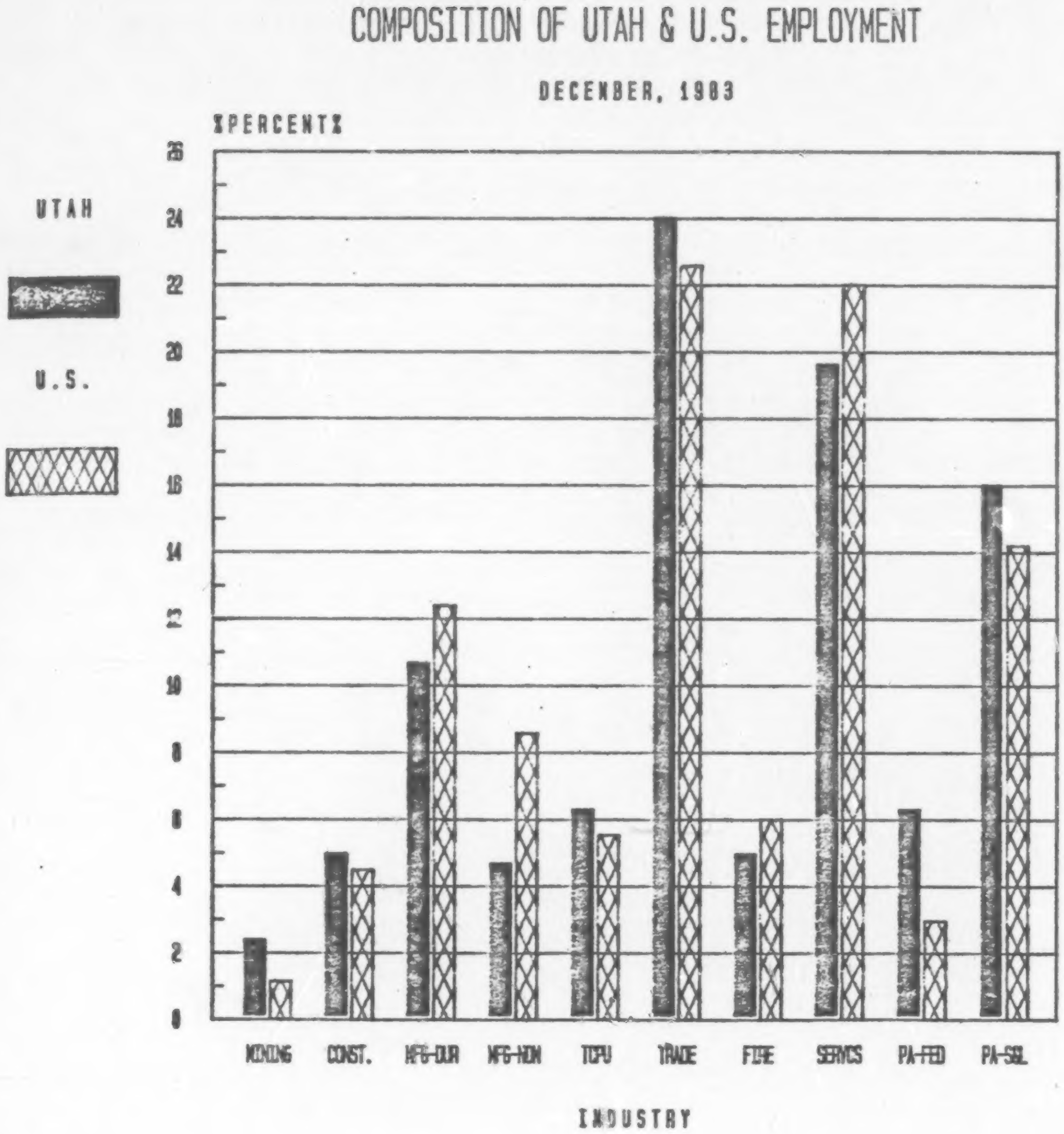
On the whole, the only major difference between Utah's service sector and the nation's is a larger share of employment in non-profit organization services and educational services due to the headquarters of the L.D.S. Church (Mormons). The presence of the Church of Jesus Christ of Latter Day Saints is a stabilizing influence in the service sector, but not a growing segment of the service industry. Brigham Young University, the largest private university in the nation, employs over 10,000 people (Table 3), but its growth trend has leveled off in recent years. The L.D.S. Church is also involved, to a major or lesser extent, in television broadcasting, newspapers, insurance, welfare services, hospital services and retailing. The L.D.S. Church Headquarters in Salt Lake City is also a focal point for church administration and a major tourist spot. L.D.S. Church subsidization of downtown rents in Salt Lake City as well as outright land gifts set the stage for significant renovation in a four block area adjacent to the Salt Lake Temple grounds. Two new malls with high rise office space, as well as a new symphony hall have kept tourist and retail trade dollars in downtown Salt Lake City.

As in other states portions of Utah's service sector are exporting their products, such as software, religion and recreation. The fact that the service sector in America is rapidly becoming a primary or basic industry cannot be lightly dismissed.

Government

Chart 6 which depicts Utah's employment composition relative to the United States indicates the importance of federal employment in Utah. This is due not only to federal government ownership of 60 percent of Utah land, but also to several key military installations in northern Utah (Hill Air Force Base, Ogden Defense Depot, Tooele Army Deport) as well as the regional Internal Revenue Service Processing Center. However the 6.3 percent of Utah's work force employed by the federal government (compared to 3 percent nationwide) is diminishing.

Chart 6


COMPOSITION OF UTAH & U.S. EMPLOYMENT
DECEMBER, 1983
%PERCENT%
UTAH
U.S.
26
24
22
20
18
16
14
12
10
8
6
4
2
0
MINING
CONST.
MFG-DUR
MFG-NON
TCPU
TRADE
FIRE
SERVCS
PA-FED
PA-S&L
INDUSTRY

State and local government employment also comprises a higher percent of employment (16.0 percent) than the nation (14.2) due to large demands for public education. Its growth is consistent with population trends in Utah - 2.6 percent in 1983. Steady growth in state and local government in the past two years offset federal government declines and contributed to the upward slope of overall government employment in Chart 7.

Trade, Transportation, Communication, & Public Utilities & Finance, Insurance & Real Estate

Charts 7 and 8 depict steady growth among these sectors. The development of the Western Airline hub at the Salt Lake City International Airport gave transportation sector a boost in 1982 which partially offset employment declines in other air carriers, railroads and trucking. Finance, insurance, and real estate employment which leveled off in 1982 continued its upward slope after the third quarter of 1982.

The eventual export of electricity from two large power plants will, in future years, lend strength to those sectors.

Chart 7

TRADE (T) AND GOVERNMENT (G) EMPLOYMENT IN UTAH

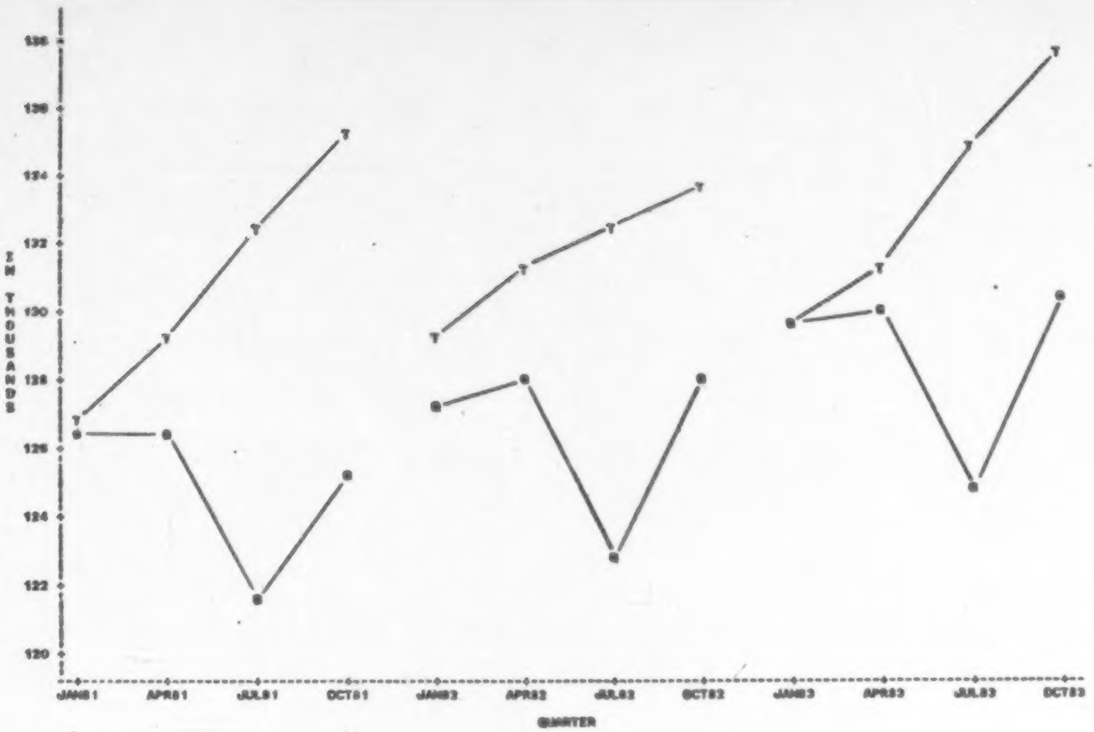
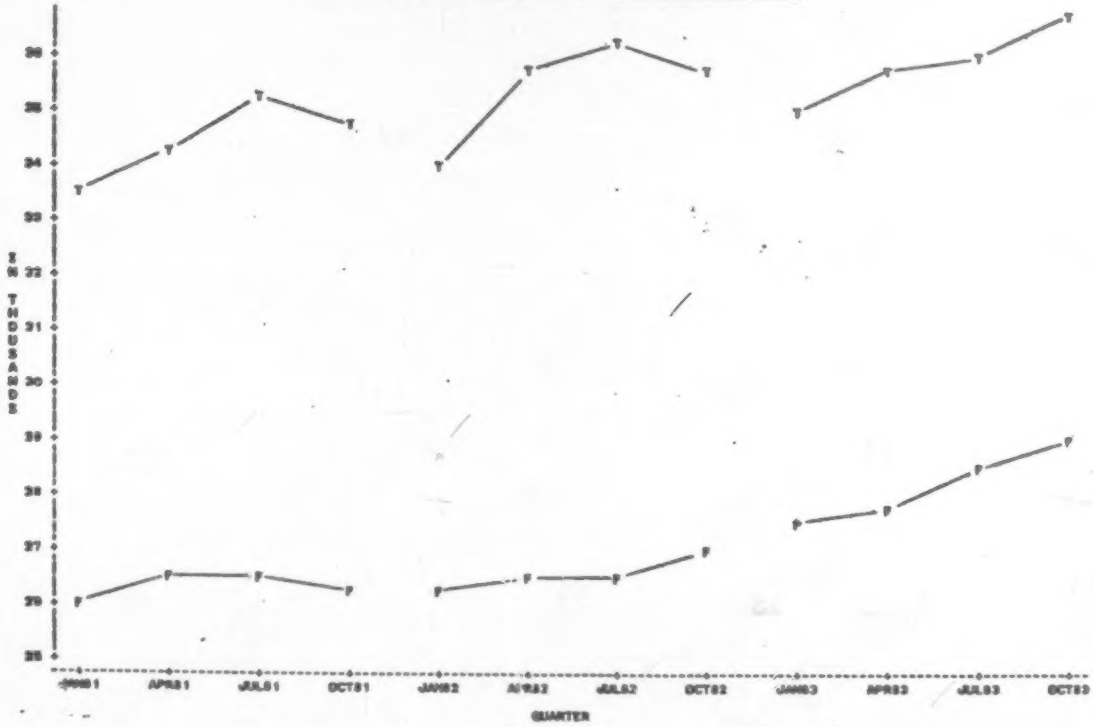


Chart 8

TRANSPORTATION, COMMUNICATION & PUBLIC UTILITIES (T)
FINANCE, INSURANCE & REAL ESTATE (F) EMPLOYMENT IN UTAH



POPULATION

The high birth and fertility rates in Utah--between 1.75 and 2 times the national average--are generally well known. Consequently, Utah has the highest rate of natural population increase in the nation and continues to rank among the top half dozen states in population growth rates. Population projections based on cohort survival models integrated with economic base models are used to provide projections of population, employment, labor force, and school enrollments. In these modeling techniques net in or out-migration is the residual component to balance the population with employment. For Utah and the Rocky Mountain Region as a whole, in-migration during the 1970's was relatively high. The differences in net in-migration among the states were substantial as were the differences in the rates of natural resources.

During the year 1982-83 (July to June) Utah experienced its first year of net out-migration since 1966-67 (Table 2, line 18). Net out-migration in that year exceeded 3,000 and the patterns were consistent across counties throughout the state. This shift in migration is not easily explained by the demand side of the labor market in aggregate terms because Utah's unemployment rates remained roughly two percentage points below national rates and were comparable to surrounding states.

One possible demand explanation concerns the fairly dramatic shifts in the outlook for primary metals and energy development activities and the structural changes in the prospects of the primary metals industries. It is unfortunate that so little actual data exists on micro studies of the migrants to ascertain better information on why people move. Some informed conjecture has occurred about the supply side of the market and why migration patterns might be affected by supply consideration as unemployed people perceived their differential advantages in different labor markets. Out-migration caught most economic forecasters and demographers by surprise, and the standard response is that th 1982-83 experience was an aberration, but the fact is that job growth in 1982 was nil and 17,000 students graduate each year from high school and more from college looking for work.

The sensitivity of population forecasts to assumptions about economic growth and migration is clearly reflected in the fact that projections of population growth rates out to the year 2000 prepared by national and state research organizations vary from low rates of 1.3 percent per year to high rates of 3.4 percent per year. These differences in assumed population growth rates result in population estimates for the year 2000 that vary by more than three-quarters of a million people in a state which now has a population of approximately 1.6 million. So much for the challenges of planning.

RETAIL SALES, BUSINESS, EQUIPMENT PURCHASE & SERVICES

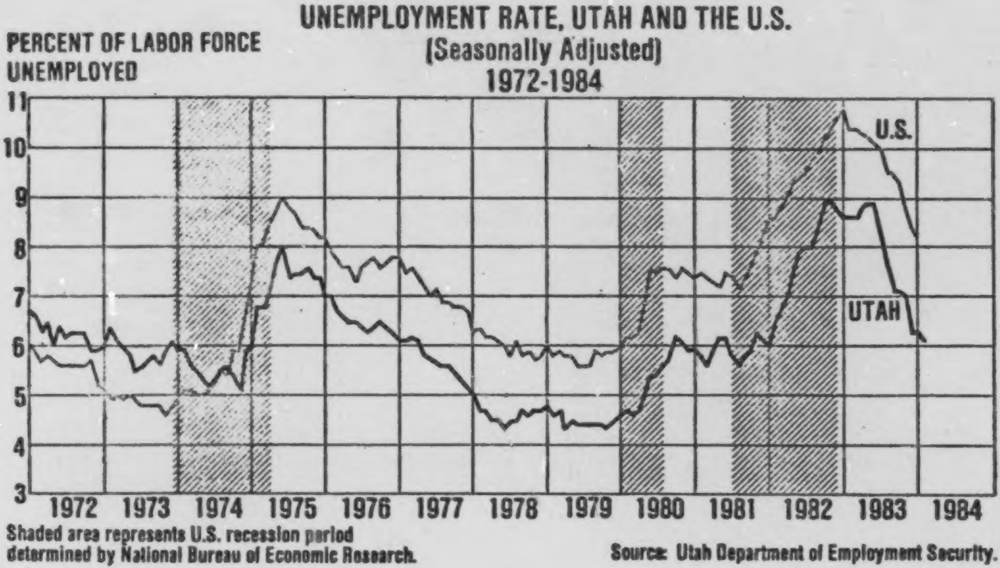
Data published by the Utah State Tax Commission in recent years has aided economists in understanding of the complexity of Utah's economy as well as to the significant structural shifts within its component parts. Since purchases of tangible property (except those which become integral to the product) are taxable under Utah sales tax law, sales in the mining construction, manufacturing transportation, and wholesale trade sectors to a large extent represent purchases of equipment or represent purchases of component parts which become part of a structure. As of the third quarter of 1983, these purchases still were in decline dropping from $758 million in the third quarter of 1981 to the $644 million level in 1983's third quarter.

Despite the recession retail sales increased during 1982 over 5 percent performing substantially better than U.S. retail sales which increased 2.7 percent (in current dollars). Retail trade fell behind national growth rates in the first two quarters of 1983, however. A combination of over-production of coal and the fourth largest landslide in American reported history shut off Utah's coal field from its western railroad routes and sent Utah unemployment into a "saddle" affect just as the nation's unemployment rate began to drop (Chart 9). A very wet spring along with a rapid thaw in late May - early June, 1982 combined to flood Utah's streams and rivers. Spot flooding occurred and mudslides endangered the lives of a few hundred people. Retail sales did slow due to cautious and restrained consumer buying during these apprehensive times.

Then in the third quarter of 1983 pent-up demand for consumer goods was unleashed as retail sales increased 11.9 percent over 1982's third quarter sales (Chart 10).

The leading sectors in Utah's recovery during the third quarter of 1983 were durable goods sales, specifically building and garden (up 26.2 percent), motor vehicle dealers (up 26.9 percent), and furniture and home furnishing (up 22.1 percent). These interest sensitive sectors fared quite well as interest rates declined from 1982 peaks and as real disposable income grew due to increasing employment and lower inflation rates. New dwelling units, up 91 percent in Utah during 1983, certainly had an impact on building and garden and the furniture sectors. A 26.8 percent increase of new car and truck sales in Utah can be explained by significantly improved consumer confidence and rapidly decelerating unemployment (Chart 9).

Chart 9



Shaded area represents U.S. recession period determined by National Bureau of Economic Research.

Source: Utah Department of Employment Security.

Although sales increases of nondurable goods did not reach double digit levels, they did better than the 3.8 percent inflation rate. Sales at food stores grew 8.3 percent, while those at eating and drinking places grew 9.8 percent. Sales at general merchandise and apparel stores grew moderately at 4.5 and 5.8 percent rates, respectively.

After two consecutive years of 17 percent increases (1981 and 1982) sales and taxable services in Utah's service sector leveled off in 1983. Once all the new hotels had come into service hotel sales and services flattened out. Modest growth is expected, however, as the recovery continues and as some expansion in hotels and recreation are expected.

In summary, real changes in gross taxable sales, services and business equipment purchases (Chart 11) since 1980 have demonstrated an oscillating behavior approximating the sin curve. Real decreases more than 3 percent in 1980 were followed by four quarters of 3 percent plus increases, followed by five quarters of real nagative real sales. Since second quarter of 1983 the economy improved and we have experienced three straight quarters of positive real growth. The oscillations, however, almost appear to be predictable and if extended would oscillate into real sales declines in 1985.

Chart 10.

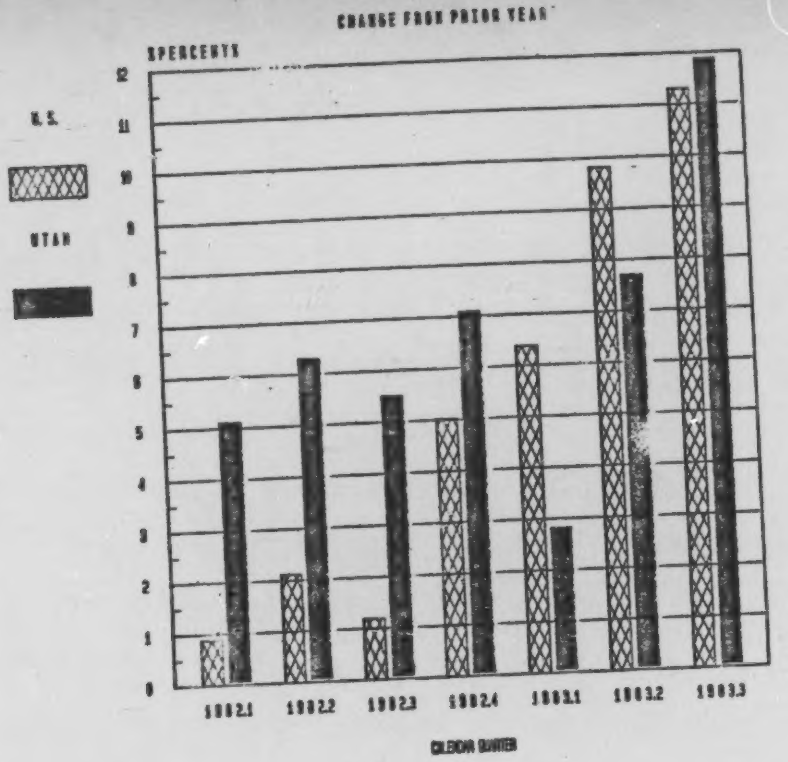
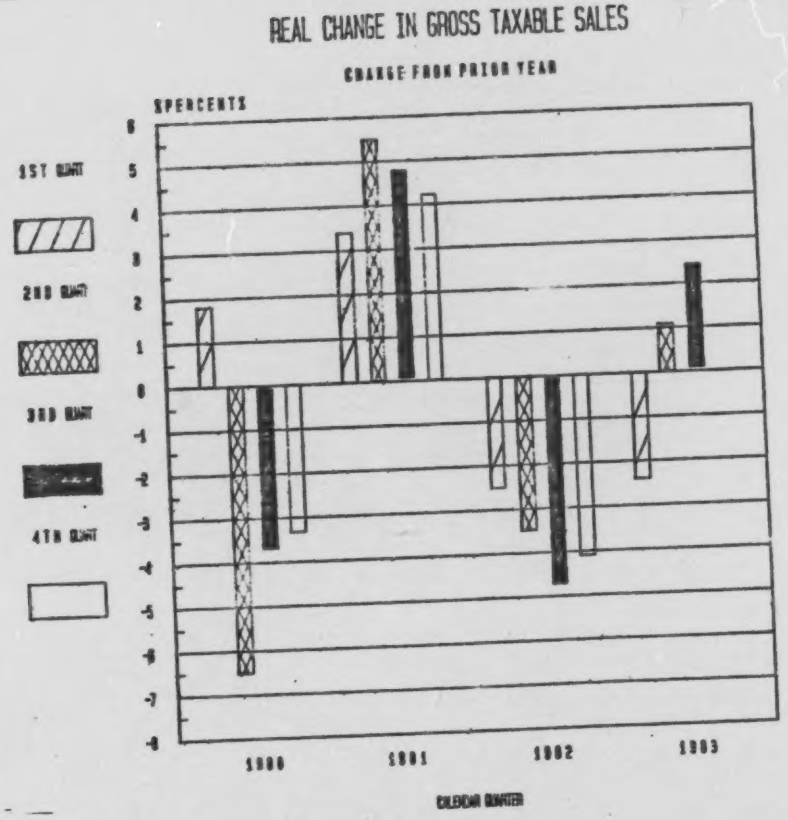


Chart 11



STATE GOVERNMENT FINANCES

As fiscal year 1982-83 came to a close state finance officials became acutely aware that the state was headed towards a $20 to $30 million general fund (and Uniform School Fund) deficit. The Governor's 2.75 percent budget reduction initiated earlier in the year would not fill the gap created by falling withholding taxes and flat sales tax growth. A special legislative session which met late in June allowed the state to transfer $31 million held in other funds to be used in the 1982-83 year. One large source transferred due to a favorable ruling by the State Supreme Court were royalty earnings from the State Land Fund. The state also expended funds normally held in trust for protested tax payments amounting to $10 million. Due to additional agency savings of over $50 million particularly in capital outlay, the state ended the fiscal year with an $11 million surplus.

The reworking of 1983-84 revenue forecasts in June, 1983 tempered by skidding receipts in almost every major category convinced the Legislature to institute a "temporary" sales tax of one-half percent between October 1, 1983 and September 30, 1983. As with the Emergency Revenue Act of 1933 which instituted Utah's sales tax temporarily, of the tax hike was made infinite during the January, 1984 budget session.

With the highest birthrates in the nation, the Utah Public School System has attempted to meet the demands of school enrollment increases which have been growing 3.2 percent per year since 1980. This compares to a 1 percent growth rate in the 1970's. The strain is particularly acute in suburbs along the Wasatch Front with young families. In response to growing class size as well as to national and state education task forces which point out the relative mediocrity of the existing system Governor Scott M. Matheson proposed a 17 percent increase in the State Supported Minimum School Program for the 1984-85 budget. His proposal included a four percent funding increase for growth in the numbers of students, a 6 percent salary increase and the balance going for education reforms such as a four-level career ladder and special purpose programs designed to improve productivity.

In the face of a historically, fiscally conservative, veto-proof, Republican legislature Democrat Matheson recommended increasing general fund spending statewide by 16.8 percent. But revenue forecasters foresaw only an 8.6 percent increase in revenues during fiscal year 1984-85. In order to finance the 16.8 percent spending increase, the governor called for $148 million in general fund tax increases. The largest tax package proposal in Utah history included increasing individual income taxes ten percent by allowing only 25 percent of federal income taxes as a deduction and enlarging the brackets to lighten the load on lower and middle incomes. He also proposed to continue the one-half percent sales tax increase, broaden the sales tax base to include non-medical professional services, increase the corporate income tax rate from four to six percent and increase the severance tax on oil and natural gas from two to six percent. He also proposed a three cent per gallon hike (from 11¢ to 14¢) in the gasoline and diesel tax to augment the Transportation Fund.

The 1984 Legislature adopted half of the governor's proposals, which will raise about $75 million in new revenue. As mentioned above, it extended the state sales tax rate indefinitely at 4-5/8 percent. It increased the corporate income tax rate from four to five percent and doubled the severance tax on oil and gas companies from two to four percent. The Legislature also increased the gasoline tax to the Governor's recommended level at 14 cents per gallon. Neither the restructuring of the individual income tax, nor the extension of sales tax to non-medical professional services were given a hearing even at the committee level. Instead of requiring large sales taxpayers to remit sales taxes monthly, as the Governor proposed, for the purpose of funding one-time flooding expenses, the 1984 Legislature required large taxpayers (with annual tax liability in excess of $96,000) to file April and May taxes early on June the fifteenth each year. This quick-fix method will preclude some of the major advantages of the monthly filing proposal, particularly sooner notice of taxpayer delinquency and enhancement of revenue projections.

In September, 1983 the price of copper began to dip below 70 cents per pound putting extreme pressures upon Kennecott Copper Division of SOHIO. Kennecott had managed to survive continual price declines since 1981 since about 20 percent of its revenues came from gold and silver. After significant layoffs in 1982 the company still was in the red as prices dipped lower and lower. On the basis that it might invest upwards of $400 million to modernize its open-pit mine, Kennecott (and eventually the entire mining industry) made a strong pitch to the 1984 Utah Legislature to:

(1) Exempt new construction, expansion or modernization in excess of $200,000 per year of any mine, mill, reduction work, smelter, refinery (except for oil and gas refineries) for ten years;

(2) Exclude from assessed value construction work in progress (CWIP) on improvements and personal property, thus exempting it from the property tax.

Consultants estimated the annual cost to the state of the sales tax proposal at about $5 million per year and $20 million per year for the property tax abatement. Since the Kennecott share of the latter tax cut would only have been 11 percent of the total, the property tax proposal was not very well targeted and was not passed. On the other hand the sales tax exemption could be legally specified to the mining industry, thereby Kennecott's share of the relief would be about 55 percent. The Legislature approved the sales tax exemption but limited the duration to five years and increased the exemption floor to $500,000 per year.

A BRIGHTER UTAH ECONOMY IN 1984

Due to the recent, stunning increases in Utah employment coupled with favorable short term prospects in Utah's manufacturing, services, construction and government sectors, the economic outlook is bullish for Utah during 1984. Employment in Utah is estimated at 585,000 jobs (Table 1) for 1984, an increase of 20,000 jobs over 1983. We foresee significant increases in the manufacturing sector where about 5,000 jobs will be created. About 2,000 new jobs alone will be added due to Hercules' expansion in rocket motors and light-weight graphite fibers production. In addition, Morton Thiokol will be hiring workers in response to a recent $220 million contract with NASA to build space shuttle motors. Our supply/demand model estimates that Utah housing starts will continue to climb by almost nine percent in 1984 to 16,000 units from the 14,664 starts in 1983 up from the thirteen year low of 7,700 starts recorded in 1982. About 1,000 additional construction jobs will be created as the $5.8 billion Intermountain Power Project phases into peak construction during 1984. Thus, construction employment will be increasing about 12 percent. Both the services and government sectors should continue to grow due to continued population growth of about 3 percent and improving tourism.

The 3.5 percent job growth combined with 5.5 percent growth in compensation will increase non-agricultural wages (line 13, Table 1) by 9.2 percent in 1984. Real disposable non-agricultural wages in Utah should grow about 3.8 percent, a factor which bodes well for consumer spending. Personal income should grow commensurately with wages, at about 9.0 percent during 1984. Incorporated in this estimate are 16 percent increases in non-farm proprietor's income and social insurance taxes, offsetting each other. Dividends, interest, and rent are expected to rebound in 1984 to about 8 percent.

Table 4 lists our forecasts for retail sales and services as well as (taxable) business equipment purchases in Utah for 1984. The forecast is derived from a quarterly, econometric, component sales tax forecasting model recently developed at the Tax Commission. Quarterly forecasts of Utah non-agricultural wages, Utah housing starts, oil prices, U.S. manufacturing plant and equipment purchases, real interest rates, gasoline prices, international airport air passenger arrivals and departures, and a Utah "misery" index drive the forecast.

Retail sales which only grew 1.8 percent in 1982 began to bounce back slowly during the middle of 1983 and then came on strong during the second half of 1983. Recent collections at the Tax Commission indicate that the fourth quarter of 1983 have increased 16 percent. The sales tax model forecast a 13 percent increase in the fourth quarter of 1983. After four quarters of retail sales and service double digit growth from the fourth quarter, 1983 until the third quarter of 1984 the model calls for a tapering off in the fourth quarter of 1984.

Retail sales and services are expected to grow about 9.5 percent in 1984. Business equipment purchases may grow over 16 percent in 1984, due primarily to a very weak 1983 growth of only 4.1 percent. Overall retail sales, services and business equipment purchases should grow 11.5 percent in 1984 with strong gains in the first three quarters, followed by a tapering off in the fourth quarter of 1984.

Table 4 FORECAST OF UTAH

RETAIL SALES, SERVICES & BUSINESS EQUIPMENT PURCHASES

In Million Dollars

Quarter	Retail Sales & Services	Business Eq. Purchases	Other Sales	Total
1982 I	$ 1,387	$ 904	$ 79	$ 2,370
1982 II	1,546	873	69	2,488
1982 III	1,574	869	54	2,496
1982 IV	1,734	868	63	2,666
TOTAL	6,241	3,514	265	10,020
1983 I	1,439	890	74	2,403
1983 II	1,671	911	44	2,626
1983 III	1,723	816	112	2,651
1983 IV P	1,974	1,041	85	3,100
TOTAL P	6,807	3,658	315	10,780
1984 I F	1,688	1,051	75	2,814
1984 II F	1,798	1,036	75	2,909
1984 III F	1,901	1,064	72	3,038
1984 IV F	2,067	1,120	70	3,257
	$ 7,454	$4,271	$ 292	$12,016

PERCENT CHANGE FROM
PREVIOUS YEAR

1983 I	3.8	-1.6	1.4
1983 II	8.1	4.4	5.6
1983 III	9.5	-6.1	6.3
1983 IV P	13.8	19.9	16.3
TOTAL P	9.1	4.1	7.5
1984 I F	17.3	18.1	17.1
1984 II F	7.6	13.7	10.8
1984 III F	10.3	30.4	14.6
1984 IV F	4.7	7.6	5.1
TOTAL	9.5	16.8	11.5

P = Preliminary Estimate
F = Forecast

REFERENCES

(1) Bureau of Economic Analysis. U.S. Department of Commerce. Survey of Current Business. Volume 63, Number 12. Washington, D.C. December, 1983.

(2) Bureau of Economic and Business Research, University of Utah, Construction Reports. Volumes 25 and 26. Salt Lake City, Utah.

(3) Burks, Jeff. Utah Energy Statistical Abstract. Utah Energy Office, Utah Department of National Resources. Salt Lake City, Utah. December, 1983.

(4) First Interstate Bank. Forecast 1984-85. Research and Planning Division. Los Angeles. December, 1983.

(5) Lee, William. "Preliminary Discussions on The Economic Impact of SB22 and SB23." Working Paper One. Economic Research Associates. San Francisco. January, 1984.

(6) Levy, Yvonne. "Brighter Western Economy." FRB SF Weekly Newsletter. Research Department, Federal Reserve Bank of San Francisco. February 3, 1984.

(7) Matthews, Kelly K. "First Security Newsletter" Volume 31, No. 1. Salt Lake City, Utah. January, 1984.

(8) Salt Lake Area Chamber of Commerce, "Keeping Score - 1984 in Review." Salt Lake City, Utah. February, 1984.

(9) Utah Department of Employment Security. "Utah Labor Market Report." Salt Lake City, Utah. January, 1984.

(10) Utah Foundation. Statistical Review of Government in Utah. Salt Lake City, Utah, 1983.

(11) Utah Office of Planning and Budget, Operations Budget 1984-85, Budget in Brief. Salt Lake City, Utah. December, 1983.

(12) Wharton Econometric Forecasting Associates. Quarterly Model Outlook. Volume 3, Number 2. Philadelphia. February, 1984.

NEW MEXICO

NEW MEXICO ECONOMIC REVIEW AND OUTLOOK FOR 1984

by

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March 1984

Paper prepared for second annual Mountain States Region Economic Outlook Conference, March 13, 1984, Phoenix, Arizona.

TABLE OF CONTENTS

Page

Introduction 1

A Profile of the New Mexico Economy 2

Composition of Nonagricultural Employment 2

Population 5

Regional Distribution of State Economic Activity 8

State Government Financial Structure 12

Review of New Mexico Economy in 1983 14

1984 New Mexico Economic Outlook 25

Footnotes 32

LIST OF TABLES

Table		Page
1	New Mexico and U.S. Nonagricultural Wage and Salary Employment	3
2	Population Trends: 1960-1982 for U.S., New Mexico and Bernalillo County	7
3	Percent Distribution of the Population by Age: 1960-1980, New Mexico and U.S.	9
4	Nonagricultural Employment by Sector, 1983 for New Mexico, Albuquerque SMSA, Rest of New Mexico	10
5	New Mexico General Fund Revenue Sources	15
6	New Mexico Nonagricultural Employment, 1983 Growth Rates by Sector	18
7	New Mexico Energy Production	19
8	Pre-Meeting Forecast Using Control Solution, New Mexico and Albuquerque Aggregates, First Quarter of 1984	26
9	Pre-Meeting Forecast Using Control Solution, New Mexico Nonagricultural Employment Summary, First Quarter of 1984	27
10	New Mexico Nonagricultural Employment 1984 Projected Growth Rates by Sector	29

LIST OF CHARTS

Chart		Page
1	New Mexico and Albuquerque Nonagricultural Employment Growth Rates 1977-1983	16
2	New Mexico Natural Gas Well Completions	21
3	New Mexico Oil Well Completions	21
4	New Mexico Total Housing Units Authorized	24

Introduction

Like the other mountain states, New Mexico experienced rapid economic growth during the decade of the 1970s. This economic expansion was fueled by the exploration and development of the state's diverse energy and mineral resources, a mild expansion of the manufacturing base and a 28.1 percent increase in population. Between 1973 and 1980 New Mexico personal income increased 13.2 percent per year on average compared to 10.8 percent for the U.S., while during the same period total nonagricultural employment increased 4.8 percent per year compared to 2.7 percent for the U.S.

This record of strong economic growth within the state, however, came to an end during the 1980s as the boom in energy resource development subsided and the prolonged national recessions of the 1981-1983 time period both had a great negative impact on the New Mexico mining and manufacturing sectors. Both income and employment gains have slowed dramatically in the 1980s. Between 1980 and 1983 New Mexico nonagricultural employment increased on average only 0.94 percent compared to a -0.4 percent for the U.S., while personal income in the state grew only 8.7 percent compared to 8.0 percent for the U.S.

The intention of this article is to review the New Mexico economy in 1983 and to examine the prospects for the state's economy in 1984. In the review of 1983 two major issues are explored: (a) the emerging disparity in economic growth within the state between urban Albuquerque and the rural areas outside Albuquerque and (b) the reasons why New Mexico lagged behind the national economic recovery in 1983. In the outlook for 1984 two major points are developed: (a) the New Mexico economy is finally pulling out of the recession and joining the rest of the nation in a recovery and (b) 1984 should be the best year since 1979 for the New Mexico economy.

A Profile of the New Mexico Economy

As background for this review and outlook of the New Mexico economy, it is important to consider the structure of the state economy. A basic overview of the structure of the state's economy includes the types and magnitude of economic activity conducted within the state as illustrated by the composition of nonagricultural employment, population, the distribution of aggregate economic activity throughout the state and the composition of state government finances.

Composition of Nonagricultural Employment

Table 1 provides data pertaining to total nonagricultural wage and salary employment by sector both in New Mexico and for the nation as a whole on an intermittent basis from 1970-1983. Agricultural employment in New Mexico accounted for only 3.6 percent of total statewide employment in October, 1982. Consequently, the nonagricultural employment data represents a reliable profile of the state economy.

The trade, services and government sectors account for slightly over 70 percent of all jobs within the New Mexico economy. The predominance of the public sector within New Mexico is clearly evident. Although it declined from more than 30 percent of total nonagricultural employment in 1970 to 26.7 percent in 1983, the number of government jobs exceeds employment levels in any other sector of the state economy. In contrast, government employment at the national level has remained at roughly 18 percent of total U.S.

TABLE 1

NEW MEXICO AND U.S. NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT[1]

	1970		1975		1980		1983	
	No.	%	No.	%	No.	%	No.	%
New Mexico (thousands)								
Total	292.6	100.0	370.1	100.0	465.4	100.0	480.7	100.0
Government[2]	89.2	30.5	104.8	28.3	125.0	26.9	128.3	26.7
Trade	62.0	21.2	83.6	22.6	103.4	22.2	111.9	23.3
Services[3]	53.0	18.1	68.3	18.5	91.8	19.7	98.0	20.4
Manufacturing	21.4	7.3	28.6	7.7	34.4	7.4	34.0	7.1
Transportation & Utilities	20.4	7.0	23.0	6.2	28.3	6.1	29.3	6.1
Construction	17.4	5.9	25.2	6.8	32.1	6.9	35.1	7.3
Mining	17.0	5.8	20.3	5.5	29.4	6.3	21.2	4.4
Finance, Insurance & Real Estate	12.2	4.2	16.3	4.4	21.1	4.5	22.8	4.7
United States (millions)								
Total	70.9	100.0	77.0	100.0	90.5	100.0	90.0	100.0
Government[2]	12.6	17.8	14.7	19.1	16.2	17.9	15.8	17.6
Trade	15.0	21.2	17.1	22.2	20.4	22.5	20.5	22.8
Services[3]	11.5	16.2	13.9	18.1	17.9	19.8	19.7	21.9
Manufacturing	19.4	27.4	18.3	23.8	20.3	22.4	18.7	20.8
Transportation & Utilities	4.5	6.3	4.5	5.8	5.1	5.6	4.9	5.4
Construction	3.6	5.1	3.5	4.5	4.4	4.9	3.9	4.3
Mining	0.6	0.8	0.8	1.0	1.0	1.1	1.0	1.1
Finance, Insurance & Real Estate	3.7	5.2	4.2	5.5	5.2	5.7	5.5	6.1

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[1] New Mexico employment figures are in thousands and U.S. employment figures are in millions. Detail may not add to total due to rounding.

[2] Excludes military.

[3] Excludes private household workers.

Source: New Mexico Employment Security Department; Bureau of Labor Statistics; and U.S. Department of Labor.

nonagricultural employment, ranking fourth behind the manufacturing, trade and services sectors. The importance of the government sector in the New Mexico economy is really understated in Table 1 as 7,000 jobs at Sandia National Laboratories, operated by Western Electric in Albuquerque, are classified in the services sector by the New Mexico Employment Security Department. However, these jobs are totally funded by the U.S. Department of Energy. Were these jobs at Sandia Labs classified instead in the government sector, the percentage of government employment in 1983 would jump to 28.1 percent, although the downward trend in the importance of government would still be evident since Sandia Labs employment has held fairly constant throughout the time period shown in Table 1.

Compared to the U.S., New Mexico has a small manufacturing sector. In 1983 manufacturing employment nationwide constituted 20.8 percent of total nonagricultural employment, while the corresponding figure in New Mexico was only 7.1 percent. However, whereas the importance of manufacturing nationally has been decreasing over this time period, in New Mexico manufacturing has remained almost constant as a proportion of total employment.

On the other hand, mining plays a much more important role in the New Mexico economy. Between 1970 and 1980 mining employment in New Mexico grew from 5.8 percent of total nonagricultural employment to 6.3 percent. In the U.S. economy, the mining sector represented only 0.8 percent of total employment in 1970, increasing slightly to 1.1 percent in 1980. However, in 1983 the importance of mining to the New Mexico economy dropped to only 4.4 percent of total nonagricultural employment as the mining sector has lost over 10,000 jobs during the last two years. New Mexico has a diverse mining sector with significant quantities of oil, natural gas, coal, uranium, potash, copper and molybdenum.

The importance of the trade and services sectors in New Mexico is quite similar to the U.S. as a whole, although the role of services sector is overstated because of the classification of Sandia National Laboratories, as noted above. The transportation, communications and utilities and construction sectors in the state are relatively more important in the state economy, reflecting the stronger population growth in New Mexico and the export of electricity from the northwest corner of the state where mine-mouth coal-fired power plants are concentrated.

As Table 1 indicates, total nonagricultural employment in New Mexico increased from 292,600 in 1970 to 480,700 in 1983, representing an increase of 64.3 percent. The construction sector exhibited the most rapid growth during the period, rising by 101.7 percent. The large trade and services sectors registered employment growth from 1970 to 1983 of 80.5 and 84.9 percent, respectively. Government--the largest sector--grew only 43.8 percent during this time period. The mining sector's employment shows an advance of only 24.7 percent between 1970 and 1983. The mining sector was the growth sector of the 1970s, but has lost one-third of its employment in 1982 and 1983.

Population[1]

Migration sparked the turnaround in population growth for New Mexico in the 1970s. Out-migration had reduced population growth to less than one percent annually through the 1960s. However, the advent of Sun Belt migrants in the 1970s spurred rapid population growth in states throughout the South and West, including New Mexico. Where out-migration in the 1960s had eroded the growth due to natural increase (births minus deaths), in-migration in the 1970s was complementing the natural increase and, at least, doubling the rates of growth.

From 1970 to 1980, the population of New Mexico increased at an average annual (compound) rate of 2.5 percent--compared to only 1.1 percent nationwide (Table 2). Population growth in the Albuquerque Metropolitan Statistical Area (MSA), represented by Bernalillo County, was even more rapid, at 2.9 percent annually. While net in-migration contributed about half of the growth in the state, it accounted for over 60 percent of the growth in Bernalillo County.

After 1980, however, net in-migration has receded, and population growth in New Mexico slowed again. The average annual rate of growth decreased to 2.1 percent when the relative contribution of net migration to total growth dropped from 50 percent to 37 percent. In the Albuquerque MSA, the slowdown in population growth has been more pronounced. Migration had provided more rapid growth in the metropolitan population during the 1970s, and it effected a larger decrease in the growth from 1980 to 1982 when the contribution of net migration to total population increase dropped from 61 percent ot 26 percent. The overall rate of growth (average annual) in the Albuquerque MSA decreased from 2.9 percent to 1.6 percent.

Despite the recent slowing, the prognosis for population growth in New Mexico remains favorable. The decrease in growth can be attributed to the recent recession. With recovery, population growth in New Mexico and the Albuquerque MSA is expected to accelerate again. Even without the economically induced vicissitudes in migration flows, the population would continue to increase slowly through natural increase. Although birth rates have decreased drastically since the end of the baby boom in the mid-1960s, New Mexico has a younger population. The median age in 1980 was 27.3, compared to the U.S. median of 30 years.

TABLE 2

POPULATION TRENDS: 1960-1982
UNITED STATES, NEW MEXICO AND BERNALILLO COUNTY

	U.S.	New Mexico	Bernalillo County
1960[1]	179,323,175	951,023	262,199
1970[1]	203,302,031	1,017,055	315,774
1980[1]	226,545,805	1,302,894	419,700
1982[2]	231,534,000	1,367,000	434,600
COMPOUND AVERAGE ANNUAL GROWTH RATES			
1960-70	1.26%	0.67%	1.88%
1970-80	1.09%	2.51%	2.89%
1980-82	0.97%	2.16%	1.57%

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[1] As of April of the year.
[2] As of July, 1982.
Source: U.S. Bureau of the Census.

The age differential between New Mexico and the United States has narrowed in the past two decades, as evidenced in the population pyramids (Table 3). In 1960, at the height of the baby boom, over 14 percent of New Mexico's population was under five years old--compared to about 11 percent of the U.S. population. The difference in the older age groups was even greater. By 1970, however, the difference in the population aged under five years had narrowed to about one percentage point, although earlier differences in fertility were still evident in the population aged 5 to 17 years, representing 30.5 percent of New Mexico's population, but only 25.8 percent of the U.S. population.

Differences in the older age groups, 45-64 years and 65 years and over, also diminished. In 1960, the differences between New Mexico and the United States in the proportions represented by these age groups were 4 to 5 percentage points. This gap decreased to about 3 percentage points in 1970 and again in 1980 to 2.0-2.5 percentage points.

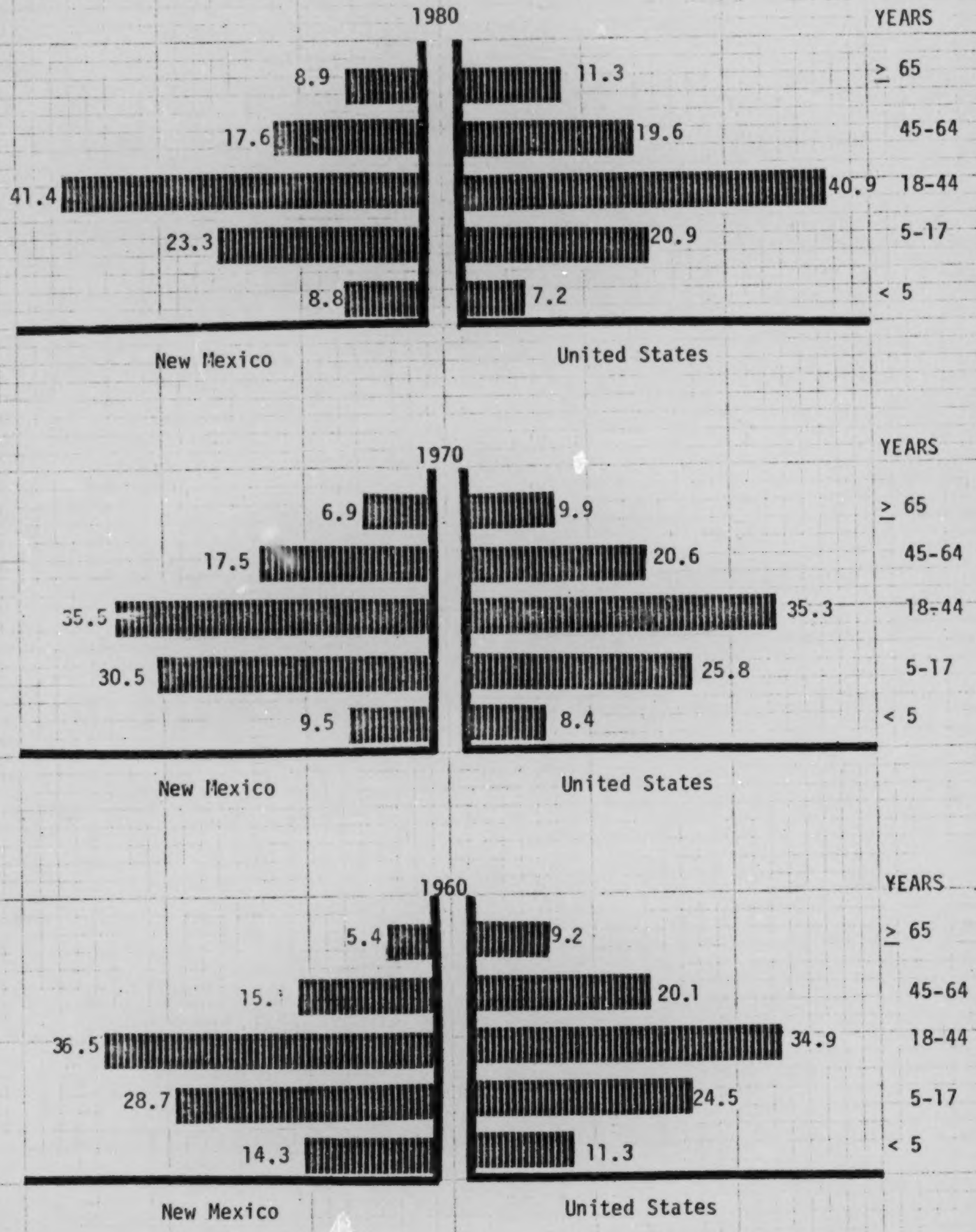
While the age gap has narrowed, differences have not been erased. Median ages demonstrate that the population of New Mexico is still much younger than the U.S. population. With a younger population, there are more births, fewer deaths, and, consequently, more growth from natural increase. It is primarily the contribution of natural increase which has maintained moderate growth in New Mexico and the Albuquerque MSA since 1980.

Regional Distribution of State Economic Activity

Almost 32 percent of the state's population in 1982 resided within the Albuquerque MSA. The Albuquerque area economy also accounts for a large share of total nonagricultural employment in New Mexico. Table 4 presents

TABLE 3

PERCENT DISTRIBUTION OF THE POPULATION BY AGE: 1960-1980
NEW MEXICO AND UNITED STATES



Source: U.S. Bureau of the Census.

TABLE 4

NONAGRICULTURAL EMPLOYMENT BY SECTOR, 1983
NEW MEXICO, ALBUQUERQUE SMSA, REST OF NEW MEXICO
(in thousands)

Sector	New Mexico	Albuquerque SMSA	Outside Albuquerque SMSA Rest of New Mexico
Trade	111.94	48.87	63.07
%Total	23.3%	25.0%	22.1%
Services	97.95	49.32	48.63
% Total	20.4%	25.2%	17.0%
Government	128.30	43.75	84.55
%Total	26.7%	22.4%	29.6%
Manufacturing	34.04	18.12	15.92
%Total	7.1%	9.3%	5.6%
Mining	21.23	0.00	21.23
%Total	4.4%	0.0%	7.4%
Construction	35.14	12.30	22.84
%Total	7.3%	6.3%	8.0%
TCU	29.32	11.61	17.71
%Total	6.1%	5.9%	6.2%
FIRE	22.82	11.45	11.37
%Total	4.7%	5.9%	4.0%
TOTAL	480.73	195.44	285.29

Source: New Mexico Employment Security Department, (through Sept. 1983), *Monthly Labor Review*.

Note: TCU = Transportation, Communications and Utilities.
FIRE = Finance, Insurance and Real Estate.

data which indicate that of the 480,730 jobs in New Mexico in 1983, 195,440 or 40.7 percent were located in establishments in the Albuquerque area.[2] The predominance of the Albuquerque area can be seen in the fact that the next four largest New Mexico cities--Santa Fe, Las Cruces, Roswell and Farmington--together comprise less than half of the Albuquerque in population in 1980.

Table 4 has disaggregated the 1983 New Mexico nonagricultural employment data by sector between the Albuquerque area and areas outside of Albuquerque in the rest of New Mexico. The trade, services and government sectors are most important in both Albuquerque and the rest of the state, but the areas outside of Albuquerque clearly are more dependent upon the government sector, which accounts for 29.6 percent of total nonagricultural employment there. Albuquerque's role as a trade and services center for the state is brought out in Table 4. Trade and services account for 50.2 percent of total nonagricultural employment in Albuquerque compared to only 39.1 percent in the rest of the state.

Manufacturing is more important in Albuquerque than in areas outside of Albuquerque. Manufacturing accounts for 9.3 percent of total nonagricultural jobs in the Albuquerque area compared to only 5.6 percent in the rest of the state. Albuquerque benefits from more favorable transit facilities relative to other areas of the state. The union of two interstate highways within the city, substantial railroad facilities, and the presence of the state's only international airport all have contributed to the more rapid development of the Albuquerque area and to its greater ability to attract manufacturing firms. Within the past few years several firms, including Sperry Flight Systems, Signetics, Intel, Ethicon and Motorola have decided to locate plants in the Albuquerque area.

All the extensive mining activity in the state occurs in areas outside of Albuquerque. In 1983 the mining sector accounted for 7.4 percent of total nonagricultural employment in areas outside of Albuquerque. Albuquerque benefits indirectly from the state's mining activity in its role as a regional trade and services center.

State Government Financial Structure

As is the case in many other states, the New Mexico constitution mandates that the state government maintain a balanced budget. In the late 1970s and early 1980s a healthy and growing state economy made government compliance with the balanced budget requirement a somewhat easy task. Aided by rapidly growing taxes on energy resources production, the state government's general fund budget registered substantial surpluses, which on a recurring basis totaled nearly $200 million during the 1980-81 fiscal year. However, since then a combination of factors--declining oil prices, reduced demand for the state's natural gas, a weak state economy, cuts in federal revenue sharing, slower inflation and substantial cuts in state taxes enacted in FY 81-32--have all contributed to a sudden reversal of the state fiscal situation.

In the middle of the 1982-83 fiscal year projected general fund revenues were revised downward from $1.2 to $1.04 billion. In order to make up the anticipated deficit a state hiring freeze was ordered, certain capital items in the general fund budget were shifted to severance tax revenue bond funding and state reserve funds were used. To deal with the continuing gap between state revenue and expenditures the 1983 State Legislature passed $115.8 million in new taxes for the 1983-84 fiscal year. The major tax increases included the restoration of 60 percent of the 1981 cuts in the personal income tax (a 30 percent across-the-board increase over 1982 rates), an increase of 20 percent in corporate income tax rates, an increase in the oil and gas emergency school tax from 2.55 percent to 3.15 percent and a quarter-percent increase in the state's share of the gross receipts tax.

Revenue projections for the 1983-84 fiscal year appear to be on target so far. However, the state general fund budget for 1983-84 was austere allowing for no pay increases for state or university employees and reduced funding for public education. Preliminary revenue projections for the 1984-1985 fiscal year indicated continued slow growth in state revenues. In order to restore funding cuts to public education and provide for large salary increases for school teachers and state employees in FY 84-85 Governor Anaya proposed an additional one percentage point increase in the state gross receipts tax for FY 84-85 which would raise $187 million in new revenue. However, the 1984 State Legislature failed to approve either the tax bill or a spending bill for FY 84-85 mainly because of the emergence of a bipartisan no-tax conservative coalition in the State Senate. A special session of the State Legislature will likely have to be called this spring in order to resolve next year's state general fund expenditure package.

As in most states the lion's portion of the state budget goes for public education. In FY 82-83 $812.4 million of total non-recurring expenditures of $1.172 billion, or 69.3 percent, went for public education. The major general fund revenue sources include the broad-based gross receipts and income taxes, energy-based taxes such as the oil and gas emergency school tax and rents and royalties on federal and state lands, and interest earnings from the large state permanent fund and the severance tax fund. Table 5 shows the percentage importance of these three major revenue sources over the last 12 years. A significant trend over the last 12 years has been the decreasing reliance on the broad-based taxes and an increasing reliance on energy-based taxes and interest earnings. The energy-based taxes are dependent upon the price and volume of New Mexico oil and gas production as well as oil and gas exploration activity. The interest earnings grow with the growth in the corpus of the state's permanent and severance tax funds, which are also closely tied to the value and production of the state's energy and mineral resources. Given the near-term outlook for stable energy prices and slow growth in the extraction of the state's natural resources, the state's fiscal outlook will remain bleak without substantial new taxes.

Review of New Mexico Economy in 1983

New Mexico total nonagricultural employment increased 1.4 percent in 1983 after having fallen by 0.3 percent in 1982, which had been the worst economic performance for the state's economy in 21 years (see Chart 1). However, if you separate out Albuquerque from the rest of New Mexico you find that the growth in Albuquerque nonagricultural employment represented almost all the employment growth in the state during 1983. Albuquerque total nonagricultural employment increased 3.2 percent in 1983 so that the Albuquerque economy experienced a strong recovery in 1983 matching the U.S. recovery, after a weak 0.4 percent gain in 1982 nonagricultural employment. In areas

TABLE 5

NEW MEXICO GENERAL FUND REVENUE SOURCES
(Percentages)

	Fiscal Year				
	71-72 (%)	79-80 (%)	81-82 (%)	82-83 (%)	83-84* (%)
Broad-Based Taxes					
Gross Receipt & Selective	54.1%	42.6%	35.2%	36.8%	39.8%
Income	20.2	10.5	6.8	7.5	10.4
	74.3	53.1	42.0	44.3	50.2
Energy-Based Taxes -					
Severance[1]	3.5%	9.9%	11.86%	11.9%	11.2%
Rents & Royalties[2]	6.2	16.4	22.57	16.7	15.1
	9.7	26.3	34.43	28.6	26.3
Interest[3]	6.1%	13.4%	21.2%	24.4%	21.3%

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* Estimated by N.M. Department of Finance and Administration.

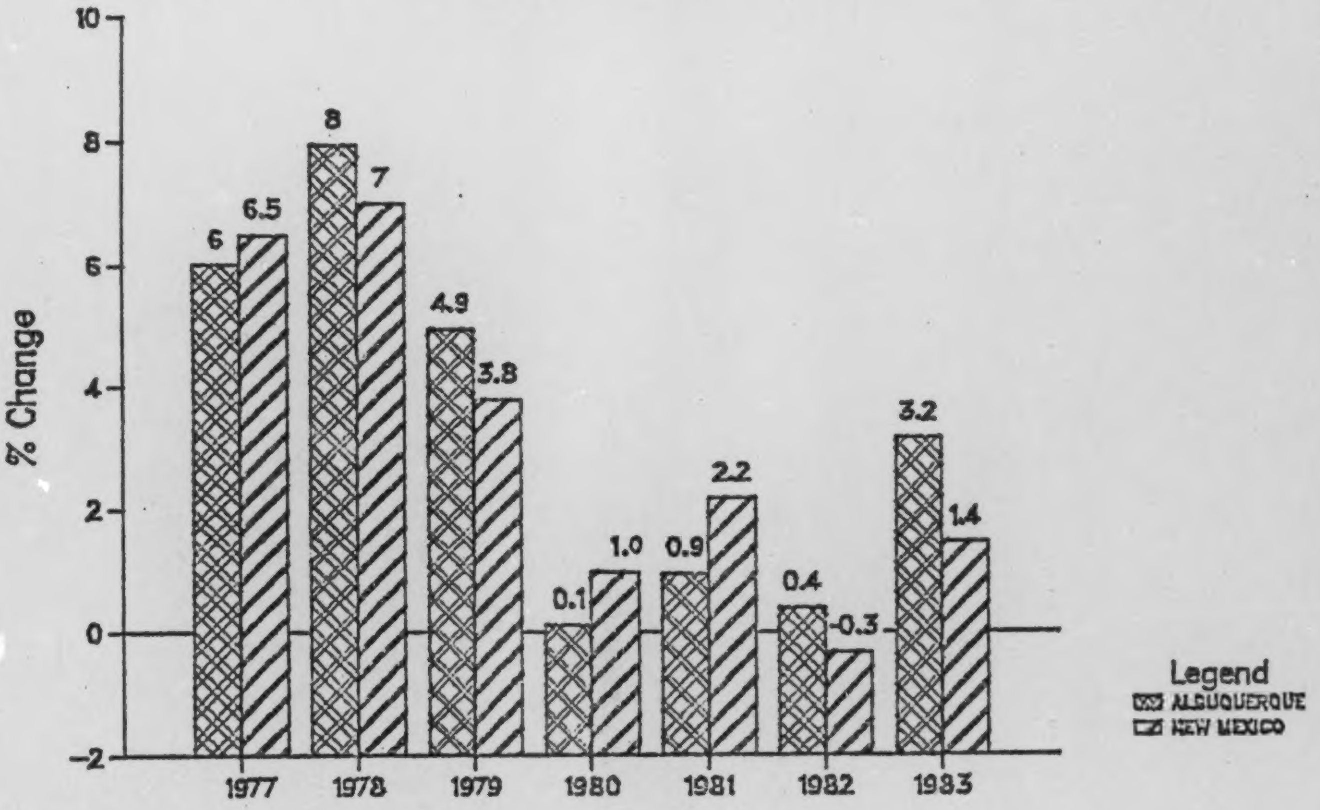
[1] Oil and gas school tax, oil conservation, resource excise and natural gas processors.

[2] Federal mineral leasing and land office income.

[3] Permanent fund, severance tax fund and earnings on state balances.

CHART 1

NEW MEXICO AND ALBUQUERQUE NON-AGRICULTURAL EMPLOYMENT GROWTH RATES 1977–1983



SOURCE: NEW MEXICO EMPLOYMENT SECURITY DEPARTMENT outside of Albuquerque in 1983 nonagricultural employment increased a very slight 0.04 percent, and these areas of the state did not experience recovery during 1983.

What you find in the New Mexico economy in 1983 is a dual economy with the Albuquerque area experiencing a strong economic recovery and the rest of New Mexico continuing in recession. In 1983 Albuquerque's unemployment rate averaged 8.53 percent, while in areas outside of Albuquerque the unemployment rate averaged 10.88 percent. The statewide average unemployment rate of 10.1 percent in 1983 masks this significant contrast in economic performance within the state.

The principal explanation for this disparity in economic growth within the state is the continued weak performance of the New Mexico mining sector. As mentioned above, the mining sector is located entirely outside Albuquerque in the rural areas of the state. In 1983 mining employment declined by 19.9 percent (see Table 6), after a decline of 14.5 percent in 1982. Over the last two years 10,000 mining jobs have been lost--one-third of the mining sector's employment. These employment losses in mining have been widespread in uranium, copper, coal, potash, oil and natural gas.

Table 7 presents historical data on production of New Mexico energy resources. Oil production has been in a slow decline for the last 12 years, until 1983. Oil production actually increased 5 percent in 1983 reflecting the expanded oil drilling of the early 1980s. Natural gas production has fallen sharply in the last two years primarily due to the lack of demand in the California market for New Mexico natural gas. The availibility of cheaper hydroelectric power from the Northwest has reduced California's dependence

TABLE 6

NEW MEXICO NON-AG EMPLOYMENT
1983 GROWTH RATES BY SECTOR

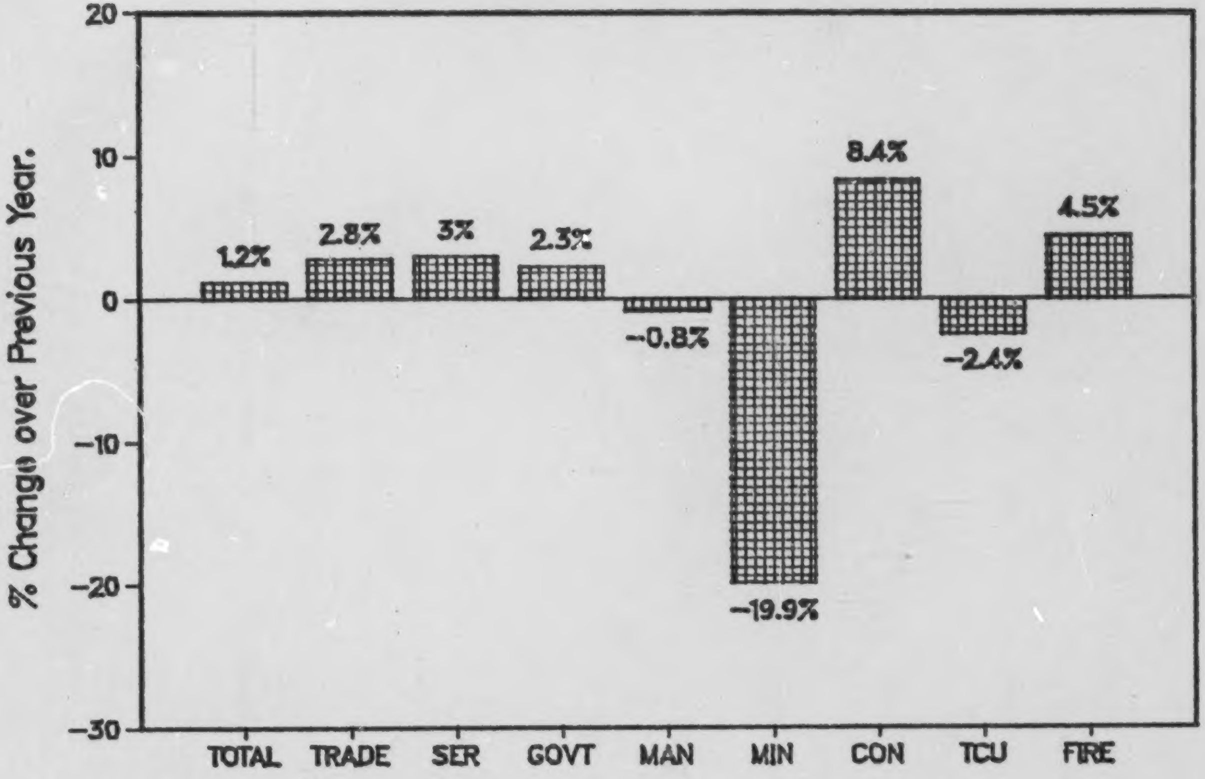


TABLE 7

NEW MEXICO ENERGY PRODUCTION
1971-1983

Year	Oil (1,000 bbl)	Natural Gas (mil. mcf)	Coal (mil. tons)	Uranium (tons)
1971	118,412	1,147	8.18	5,305
1972	110,525	1,198	8.25	5,464
1973	99,908	1,198	9.35	4,634
1974	96,677	1,246	9.67	4,951
1975	95,393	1,206	9.56	5,191
1976	90,733	1,209	9.98	6,059
1977	87,094	1,187	11.89	6,780
1978	83,752	1,142	12.78	8,560
1979	79,070	1,141	14.64	7,420
1980	74,908	1,108	19.48	7,750
1981	72,191	1,093	18.79	6,206
1982	70,669	983	19.90	3,906
1983	74,273[1]	840[1]	18.80[1]	na

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na Not available.

[1] Based on percentage change first nine months of 1983.

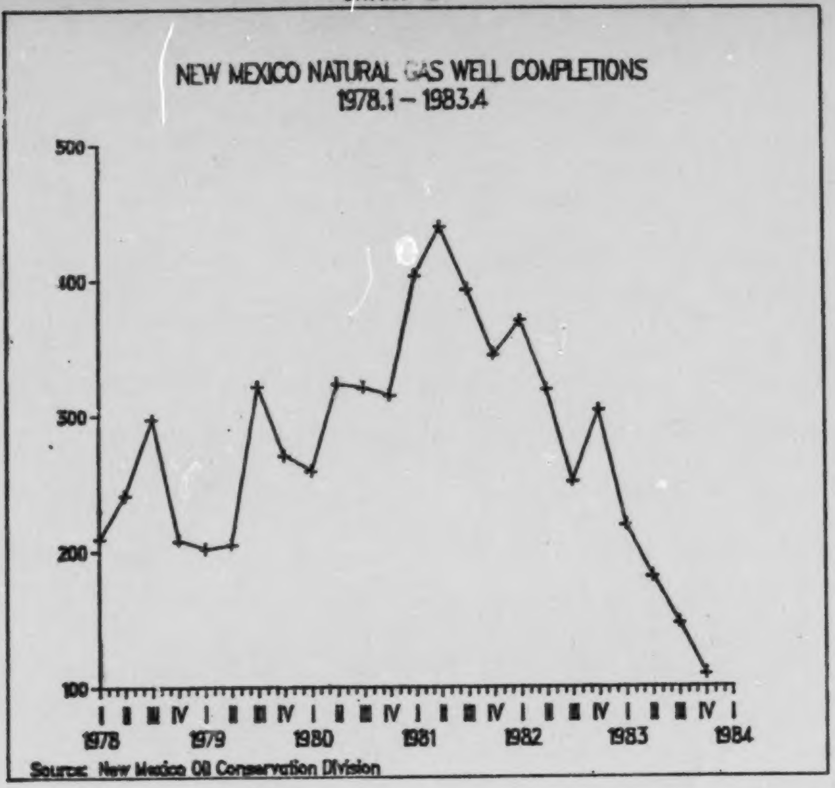
Source: New Mexico Oil and Gas Conservation Division, Oil and Gas Accounting Reports; New Mexico Energy and Minerals Department, November 1982, Annual Resources Report; U.S. Department of Energy, "Weekly Coal Production;" and U.S. Department of Energy, Statistical Data of the Uranium Industry.

on natural gas-fired power plants. And many buyers have higher priced gas contracts with "take or pay" provisions with producers outside New Mexico. Coal production is primarily used for electricity generation in New Mexico and Arizona and has been rather flat due to slower economic growth in this region. Because of concerns about nuclear power plant safety, energy conservation efforts which have lowered the demand for electric power, and competition from low-cost domestic and foreign producers, uranium production in New Mexico has declined significantly since 1979. There are now only two major uranium mines open producing under long-term contract. Uranium production data for 1983 may not be available at all due to company disclosure problems.

In the early 1980s there was a boom in oil and natural gas well drilling. (See Charts 2 and 3.) However, with the decline in energy prices, the glut of natural gas and regulatory confusion, natural gas exploration activity has fallen substantially from a peak of 400 wells per quarter in 1981 to 100 wells per quarter at the end of 1983. Oil well completions in New Mexico fell in late 1981 but have recovered since then back to the peak levels of 1981. Oil price deregulation and lower drilling costs have provided incentives for renewed oil drilling.

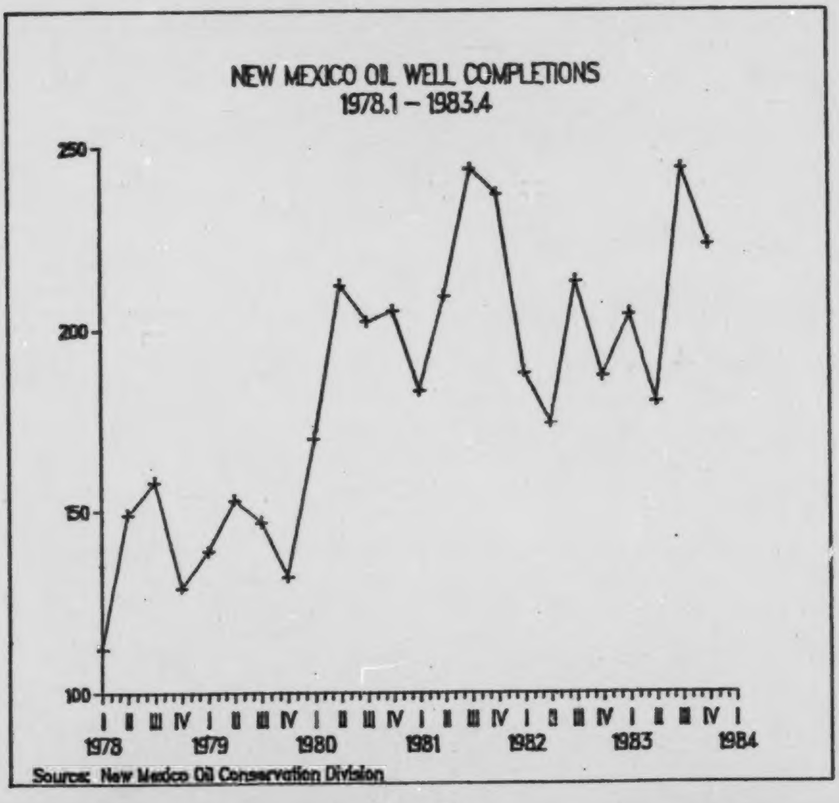
Copper and potash production in New Mexico have been hurt by the national recession, increased foreign competition and the high value of the dollar internationally. Potash--a fertilizer ingredient--has also been affected by both the federal government's PIK program, which resulted in substantially less acreage under cultivation, and the poor farm economy, in general. The high exchange value of the dollar has made imports cheaper and U.S. exports of

CHART 2



Source: New Mexico Oil Conservation Division

CHART 3



Source: New Mexico Oil Conservation Division copper and potash more expensive. Foreign copper producers also have been seeking to maximize foreign exchange revenue rather than profits.

As a general observation, for the New Mexico or Albuquerque economy to expand there must be growth in the three largest sectors--trade, services and government. Trade and services are most sensitive to real disposible income. With the improved inflation outlook in 1983 and lower federal income taxes, real disposable income has been rising of late. The impact of tourism is also felt in the trade and services sectors. New Mexico tourism is sensitive primarily to available gasoline supplies, stable gasoline prices and an expanding national economy. All these factors have been favorable in 1983. In 1983 in New Mexico trade employment grew 2.8 percent and services employment, 3.0 percent. (See Table 6.)

The government sector includes state, local and federal government. State government employment growth is linked to the growth in states revenues, which has not been favorable for the last two years, as mentioned above. Local government employment growth has been aided in the recent past by actions of the State Legislature which have given a large share of the state gross receipts tax to city and county government. Thus, the tax base of local government has expanded. On the negative side, there has been little growth--in fact, cuts--in federal revenue sharing to local governments. Federal government employment in New Mexico has been adversely affected by cuts in the federal workforce over the last three years. However, due to temporary hiring by a federal agency in Albuquerque during 1983, federal government employment actually showed some growth in 1983. Overall, in 1983 government employment expanded by 2.3 percent.

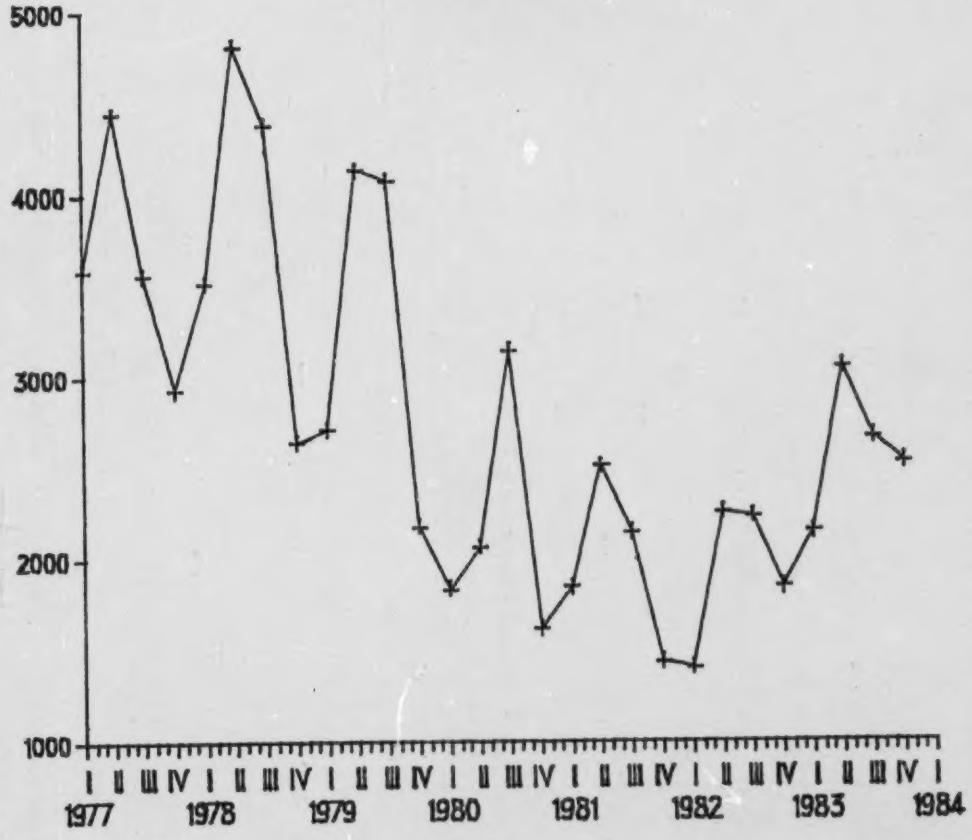
Manufacturing activity in New Mexico is primarily determined by economic forces outside the state. There is some manufacturing for in-state consumption, e.g., lumber, food products, but manufacturing output is for export out of the state. Manufacturing turned in a poor performance in 1983 in New Mexico with manufacturing employment falling on average by 0.8 percent. This was in contrast to a rather strong manufacturing sector nationally in 1983. Here again there was disparity between Albuquerque and the rest of New Mexico. Manufacturing employment increased by 1.8 percent in Albuquerque, while it fell 3.7 percent in areas outside of Albuquerque. Albuquerque's manufacturing sector has been boosted by the relocation of Sperry Flight System's Defense Systems Division from Phoenix; over 1,200 new jobs have been transferred in 1983.

Construction activity was strong in the state during 1983 aided by lower interest rates, street and highway projects, hospital expansions and state government capital projects for new prisons. Construction employment increased on average 8.4 percent in 1983 with a 33 percent increase in total housing units authorized. (See Chart 4.) Housing activity in New Mexico is still not back to the peak levels of the late 1970s, as population growth and economic activity have slowed in recent years.

The transportation, communication and utilities sector in New Mexico--a small sector--experienced a decline of 2.4 percent in employment during 1983. Employment losses were the result of deregulation in the trucking industry, layoffs in the railroad industry and job consolidation in the telecommunications industry due to the ATT divestiture. The finance, insurance and real estate sector showed solid growth in 1983 with employment gains of 4.5 percent.

CHART 4

N.M. TOTAL HOUSING UNITS
AUTHORIZED
1977.1 – 1983.4



The annual average data above mask the pattern of activity during the year. The first half of 1983 was very weak with nonagriucltural employment gains of only 0.5 percent. But the last half of the year showed signs of a blossoming recovery with nonagricultural employment increases of 2.1 percent. In the first quarter of 1983 New Mexico personal income growth was ranked only 38th among the 50 states, but by the third quarter New Mexico personal income growth ranked sixth. The New Mexico unemployment rate fell to 9.1 percent in the fourth quarter and it was the first time since the end of 1981 that this rate was below year-earlier levels. At year end 1983 housing permits in New Mexico increased a strong 37.2 percent, with a 210 percent increase in the multi-family area. Finally, improved employment conditions were evident in the still depressed mining and manufacturing sectors. In the final analysis we believe that 1983 will turn out to be a year of transition for the New Mexico economy from the slow growth of the early 1980s to a strong recovery and economic expansion in 1984 and beyond.

1984 New Mexico Economic Outlook

As noted above, at year end 1983 there were clear signs that the New Mexico economy is finally pulling out of the recession and joining the rest of the nation in recovery. However, it should be kept in mind that the Albuquerque economy did experience recovery in 1983 while the rest of the state remained mired in recession.

A continued recovery and economic expansion in 1984 is anticipated for the Albuquerque economy, and the rest of New Mexico's economy will finally recover in 1984, producing a solid year of growth for the state as a whole.

TABLE 8
PRE-MEETING FORECAST USING CONTROL SOLUTION
NEW MEXICO AND ALBUQUERQUE AGGREGATES
FIRST QUARTER OF 1984

	1984:1	1984:2	1984:3	1984:4	1985:1	1985:2	1985:3	1985:4	YEAR 1982	YEAR 1983	YEAR 1984	YEAR 1985
NM PERS. INCOME												
$BIL	14.01	14.23	14.59	14.91	15.26	15.53	15.92	16.28	12.49	13.32	14.43	15.75
%CHYA	8.54	8.02	8.17	8.93	8.91	9.12	9.15	9.20	7.72	6.57	8.35	9.09
NM REAL DISPOS. INCOME												
$BIL 72	6.06	5.72	5.86	5.91	6.32	5.54	6.10	6.16	5.40	5.67	5.89	6.13
%CHYA	3.84	4.05	3.58	3.73	4.28	3.86	4.19	4.19	3.05	3.43	3.60	4.13
ALB PERS. INCOME												
$BIL	5.31	5.43	5.58	5.71	5.78	5.90	6.07	6.21	4.77	5.11	5.51	5.99
%CHYA	6.66	7.31	8.49	8.38	8.76	8.57	8.79	8.76	9.28	7.14	7.71	8.72
NM TOT NON-AGRI												
EMPLOYMENT	484.68	494.81	504.32	506.84	504.81	514.61	522.16	523.13	473.65	479.74	497.66	516.18
%CHYA	3.02	3.32	4.17	4.40	4.15	4.00	3.54	3.21	-0.34	1.24	3.73	3.73
ALB TOT NON-AGRI												
EMPLOYMENT	196.26	202.67	205.94	208.16	207.12	210.75	213.66	215.75	189.43	195.21	203.76	211.82
%CHYA	4.05	4.29	4.36	4.79	4.47	3.98	3.75	3.65	0.38	3.05	4.38	3.96
RNM TOT NON-AGRI												
EMPLOYMENT	286.42	292.13	298.38	298.66	297.69	303.86	308.50	307.38	284.43	284.53	293.91	304.36
%CHYA	2.32	2.66	4.04	4.13	3.93	4.01	3.39	2.91	-0.80	0.04	3.29	3.56
NM UNEMPLOYMENT												
RATE	9.53	8.75	8.37	8.22	9.02	8.41	8.29	8.32	9.12	9.99	8.72	8.51
%CHYA	-10.68	-14.75	-16.00	-9.34	-5.36	-3.93	-0.95	1.23	26.06	10.32	-12.69	-2.25
ALB. UNEMPLOYMENT												
RATE	8.42	7.91	7.68	7.46	8.04	7.71	7.63	7.57	8.07	8.53	7.87	7.74
%CHYA	-5.41	-7.67	-10.33	-7.85	-4.44	-2.56	-0.69	1.45	8.48	5.93	-7.81	-1.56
NM CIV LAB FORCE												
THOUSANDS	606.03	613.58	629.15	631.31	634.93	642.59	655.06	654.96	592.00	600.72	620.02	646.88
%CHYA	2.10	2.09	3.68	4.96	4.77	4.73	4.12	3.75	2.42	1.49	3.21	4.34
ALB CIV LAB FORCE												
THOUSANDS	228.55	231.50	235.03	235.54	237.27	239.75	242.90	243.97	216.24	225.02	232.63	240.97
%CHYA	2.90	3.09	3.80	3.78	3.81	3.56	3.35	3.56	2.98	3.12	3.39	3.58
NM POPULATION												
THOUSANDS	1.42	1.41	1.42	1.43	1.45	1.44	1.45	1.45	1.36	1.39	1.42	1.45
%CHYA	2.24	1.01	1.36	2.01	2.03	2.21	1.93	1.82	2.48	2.15	1.36	2.02
ALB POPULATION												
THOUSANDS	483.47	484.03	487.49	489.53	494.52	494.68	497.79	500.74	468.93	475.91	486.14	495.94
%CHYA	2.17	1.93	2.29	2.21	2.22	2.19	2.11	2.29	1.42	1.49	2.15	2.22

1. ALL EMPLOYMENT FIGURES IN THOUSANDS
2. %CHYA MEANS '% CHANGE YEAR AGO'
3. [illegible] MEXICO' (OUTSIDE ALBUQUERQUE)

TABLE 9
PRE-MEETING FORECAST USING CONTROL SOLUTION
NEW MEXICO
NONAGRICULTURAL EMPLOYMENT
SUMMARY
FIRST QUARTER OF 1984

	1984:1	1984:2	1984:3	1984:4	1985:1	1985:2	1985:3	1985:4	YEAR 1982	YEAR 1983	YEAR 1984	YEAR 1985
NM TOT NON-AGRI												
EMPLOYMENT	484.68	494.81	504.32	506.84	504.81	514.61	522.16	523.13	473.85	479.74	497.66	516.18
%CHYA	3.02	3.32	4.17	4.40	4.15	4.00	3.54	3.21	-0.34	1.24	3.73	3.73
NM TRADE												
EMPLOYMENT	112.57	115.15	118.23	117.39	114.81	117.65	120.97	120.07	109.35	112.41	115.84	118.37
%CHYA	3.21	3.37	3.74	1.90	1.99	2.17	2.31	2.28	3.21	2.77	3.06	2.19
NM SERVICES												
EMPLOYMENT	98.57	101.48	105.24	102.65	103.32	107.19	110.45	107.58	94.95	97.80	101.99	107.13
%CHYA	3.87	3.56	4.89	4.78	4.81	5.62	4.95	4.80	0.87	3.00	4.28	5.04
NM TOTAL GOVT												
EMPLOYMENT	130.66	130.23	128.41	133.63	134.69	134.22	131.90	136.57	125.33	128.13	130.73	134.35
%CHYA	1.52	1.58	1.83	3.16	3.09	3.06	2.72	2.20	-0.40	2.25	2.02	2.77
NM MANUFACTURE												
EMPLOYMENT	34.13	35.38	36.65	36.94	36.58	37.45	38.20	38.20	33.58	33.72	35.78	37.61
%CHYA	2.29	6.45	8.11	7.50	7.19	5.66	4.22	3.40	-1.01	-0.79	6.09	5.17
NM MINING												
EMPLOYMENT	22.18	22.83	23.29	23.60	23.78	24.09	24.35	24.59	26.65	21.18	22.97	24.20
%CHYA	0.82	10.45	12.88	10.27	7.22	5.55	4.57	4.20	-14.48	-19.94	8.60	5.38
NM CONSTRUCTION												
EMPLOYMENT	34.09	36.44	38.29	37.63	36.60	38.32	39.88	39.08	31.96	34.67	36.61	38.47
%CHYA	10.07	2.85	2.48	7.83	7.38	5.15	4.16	3.84	-3.84	8.38	5.81	5.13
NM TRAN COM UTL												
EMPLOYMENT	29.38	29.57	30.00	30.83	30.83	30.89	31.17	31.84	29.82	29.10	29.94	31.18
%CHYA	-0.02	1.15	4.54	5.96	4.99	4.48	3.88	3.26	2.12	-2.42	2.91	4.16
NM FIN/INS/R ES												
EMPLOYMENT	23.12	23.73	24.21	24.17	24.20	24.79	25.24	25.22	21.77	22.74	23.81	24.96
%CHYA	4.61	4.38	4.66	5.09	4.67	4.50	4.25	4.33	1.22	4.48	4.68	4.44

1. %CHYA MEANS '% CHANGE YEAR AGO'
2. ALL EMPLOYMENT FIGURES IN THOUSANDS

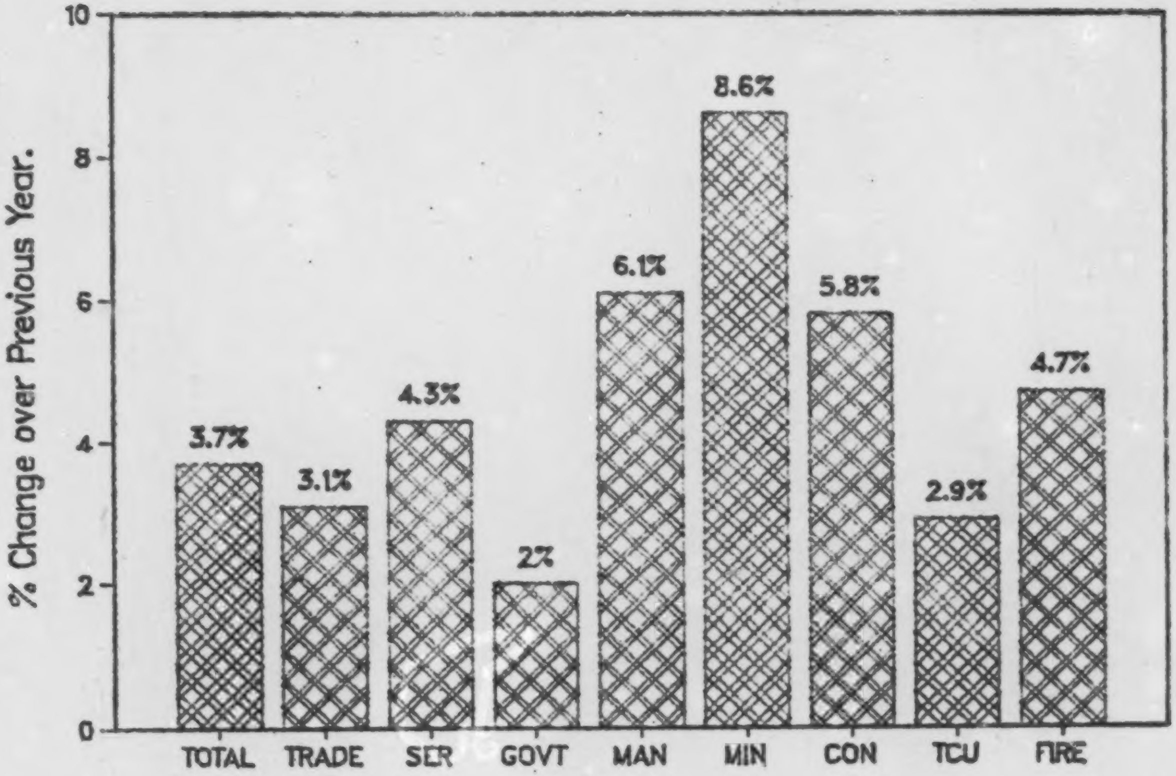
Total New Mexico nonagricultural employment is expected to increase 3.7 percent in 1984 with 4.5 percent growth in the Albuquerque area. This will be the best state economic performance since 1979. Personal income growth for New Mexico is expected to be 8.4 percent after a 6.6 percent increase in 1983. The New Mexico unemployment rate is expected to decline to 8.2 percent by the end of 1984, compared to 9.1 percent at the end of 1983. The Albuquerque unemployment rate is expected to decline to 7.5 percent from 8.1 percent by the end of 1984. These projections are based upon the results of an econometric model and forecasting service managed by the University of New Mexico's Bureau of Business and Economic Research for the last five years.[3] Tables 8 and 9 contain the most recent quarterly state forecast for the 1984 and 1985 time period for selected variables.

The projected economic recovery for the state in 1984 is expected to be broad-based with employment gains in all sectors (see Table 10) including a mild recovery in mining. Economic growth in 1984 is also more balanced between Albuquerque and the rest of the state, although Albuquerque's economic growth is still stronger.

A strong performance is expected from the manufacturing sector with a 6.1 percent increase in employment. Part of this is a cyclical rebound, but part is also new hiring expected in the Albuquerque area from Intel and Signetics, which both built semiconductor plants in Albuquerque in the early 1980s. These plants have sat idle for the last two years, but with the increased demand for integrated circuits, these plants will start production in 1984. Sperry Flight Systems will also complete the transfer of its Defense Systems Division to Albuquerque in 1984 adding another 700 people.

TABLE 10

NEW MEXICO NON-AG EMPLOYMENT 1984 PROJECTED GROWTH RATES BY SECTOR



A mild recovery in mining is anticipated with employment gains of 8.6 percent expected. Coal employment should expand as the new Lee Ranch coal mine opens to supply coal to Plains Electric's new coal-fired power plant and to supply coal on contract to Tucson Electric. The Raton coal mine, formerly owned by Kaiser Steel, also has just recently received a long-term contract to supply coal to Southwest Public Service in West Texas. Oil exploration activity turned up in 1983 as has oil production. In the near-term these trends are expected to continue. Potash should benefit from an improved farm economy in 1984 as well as from the benefits of the PIK program and the drought in the summer of 1983. More acreage is expected to be under cultivation in 1984 because of the reduction in farm inventories of soybeans and corn. And as the national economy and the world economy expands in 1984 the demand for copper should rise.

Continued increases in real New Mexico disposable income in 1984 are expected due to moderate inflation and the full effect of the 25 percent Reagan tax cut. Income will also be expanding as the state's economy improves in 1984. Rising real disposable income will be favorable for the trade and services sectors where employment gains of 3.1 percent and 4.3 percent, respectively, are anticipated.

Finally, interest rates are expected to be stable throughout most of 1984 and this keeps the recovery going in the construction sector. Construction employment is expected to increase 5.8 percent in 1984. Total housing units authorized are expected to increase 36.3 percent in 1984 with the largest increase (128.1 percent) expected in multi-family structures.

In summary, we expect the New Mexico economy to experience a strong recovery in 1984 led by manufacturing, construction, mining and services. Albuquerque's economic recovery will continue at a slightly stronger pace while the rest of the state will finally emerge from the recession in 1984.

FOOTNOTES

1 This section on New Mexico population was prepared by Ms. Lynn Wombold, Senior Demographer at the Bureau of Business and Economic Research, University of New Mexico.

2 The New Mexico Employment Security Department still reports establishment employment data on the old SMSA basis for Albuquerque. The old SMSA includes Bernalillo and Sandoval Counties whereas the new MSA designation for Albuquerque includes only Bernalillo County.

3 The current state econometric model consists of 100 structural equations and 51 identity equations. It is a detailed, simultaneous income and employment econometric model. In many instances economic activity in New Mexico and Albuquerque is related to national economic activity. State economic forecasts are made consistent with the national forecasts of Wharton Econometric Forecasting Associates in the past, and now more recently with the forecasts of Data Resources, Inc. Financial support for the econometric model is provided by the New Mexico State Government as well as eight private subscribers to the state economic forecasting service (FOR-UNM), including the Public Service Company of New Mexico, Mountain Bell, the City of Albuquerque, Gas Company of New Mexico, Sunwest Bank in Albuquerque, First National Bank in Albuquerque, Albuquerque Federal, and Southwest Community Health Services.

NEVADA

THE NEVADA ECONOMY: RECOVERY AND EXPANSION

by

Thomas F. Cargill*

The current expansion of the U. S. economy officially started November 1982 according to business cycle turning point dates published by the U. S. Department of Commerce. The Nevada economy has closely followed and reflected the national recovery, though the recovery at the state level differs from previous business cycle expansions in a number of respects. This paper summarizes the recent economic performance of Nevada during 1983 and the likely path of economic activity in 1984. In addition, long-range trends of the Nevada economy are discussed.

STRUCTURAL FEATURES OF THE NEVADA ECONOMY

T. F. Cargill (1983) provides an overview of the unique features of the Nevada economy which show that the Nevada economy differs in important respects from other state economies nationwide and within the mountain region. These features are briefly summarized as follows:

Geographic Distribution of Population and Economic Activity: Population and economic activity are concentrated in three regions of the state: Las Vegas (Clark County); Reno-Sparks (Washoe County); and Douglas County/Carson City.[1] As of July 1983, these three regions accounted for 58.3, 23.2, and 6.2 percent of the state's total population of 917,870, respectively. In the second quarter of 1983, the three regions accounted for 56.0, 27.7, and 5.9 percent of total employment, respectively. Thus, the economic structure of the state is both urban and rural.

Lack of Diversification: Nevada's economy is perhaps the least diversified state economy in the U. S. Gaming and other tourist-related services provide the primary base for economic activity. These activities dominate the three major economic areas; however, they are less important for the rural part of the state where mining and agriculture play a relatively greater role. In particular, mining dominates the economies of Esmeralda, Eureka and Lander Counties.

Nonagricultural Employment: Agricultural employment represents a small component of total employment in Nevada, representing 1.2 percent of total employment as of the second quarter of 1983. The structure of nonagricultural employment reflects the importance of the gaming and tourist sectors. Nevada service employment, which includes hotel, gaming and recreation employment, constitutes about 40 percent of total employment compared to about 20 percent for the nation and has grown in relative importance (Table 1). Service employment increased from 38.7 percent of the total in 1970 to 42.2 percent of the total employment in 1982. Service employment has also increased in relative importance for the nation as a whole, and Nevada is thus reflecting a national trend toward the service sector.

Construction employment in Nevada has been relatively more important compared to the nation. In 1982, construction employment represented 4.8 and 4.1 percent of total employment for Nevada and the U. S., respectively. In addition, construction employment for both Nevada and the U. S. has declined as a percentage of the total since the late 1970s due to high and fluctuating interest rates, structural changes in the financial system, and uncertainty over the near course of monetary and fiscal policies.

Constant Structure: The characteristics of the Nevada economy reflected by the employment figures in Table 1 have remained stable over the past decade

TABLE 1 Continued

	Nevada		U. S.	
Category	Level	Percent of Total	Level[a]	Percent of Total
Finance, Insurance and Real Estate				
1970	8,576	3.8	3,739	4.8
1975	11,150	4.0	4,264	0.2
1980	19,113	4.5	5,276	5.6
1981	19,495	4.5	5,427	5.7
1982	19,182	4.5	5,497	5.8
Services				
1970	87,323	38.7	13,619	17.6
1975	111,810	39.7	15,882	19.2
1980	172,744	41.0	19,382	20.4
1981	177,262	41.0	20,038	20.9
1982	178,540	42.2	20,415	21.6
Government & Gov't Enterprises				
1970	51,148	22.7	16,200	21.0
1975	60,081	21.4	17,704	21.5
1980	71,224	16.9	18,761	19.7
1981	72,298	16.7	18,631	19.4
1982	73,576	17.4	18,583	19.7
Agriculture, Serv., Forestry, Fisheries and Other				
1970	523	0.2	301	0.4
1975	724	0.3	362	0.4
1980	1,357	0.3	549	0.6
1981	1,355	0.3	575	0.6
1982	1,362	0.3	591	0.6
TOTAL				
1970	225,755		77,244	
1975	281,355		82,545	
1980	420,906		95,160	
1981	432,978		96,006	
1982	423,241		94,551	

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[a] In Thousands

Source: Regional Economic Information System, Bureau of Economic Analysis, U. S. Department of Commerce.

TABLE 1

NEVADA AND U.S. NONFARM WAGE AND SALARY EMPLOYMENT BY INDUSTRY
(Number of Jobs)

	Nevada		U. S.	
Category	Level	Percent of Total	Level[a]	Percent of Total
Mining				
1970	4,052	1.8	627	0.8
1975	4,359	1.6	748	0.9
1980	6,188	1.5	1,033	1.1
1981	7,814	1.8	1,152	1.2
1982	6,620	1.6	1,125	1.2
Construction				
1970	12,522	5.6	3,563	4.6
1975	12,601	4.5	3,573	4.3
1980	26,507	6.3	4,326	4.5
1981	25,751	5.9	4,171	4.3
1982	20,424	4.8	3,866	4.1
Manufacturing				
1970	8,444	3.7	19,410	25.1
1975	12,185	4.3	18,320	22.2
1980	19,173	4.6	20,354	21.4
1981	20,116	4.6	20,227	21.1
1982	18,821	4.4	18,872	20.0
Transportation & Public Utilities				
1970	13,630	6.0	4,510	5.8
1975	16,924	6.0	4,550	5.5
1980	24,168	5.7	5,129	5.4
1981	25,046	5.8	5,169	5.4
1982	24,667	5.8	5,083	5.4
Wholesale Trade				
1970	6,425	2.9	3,806	4.9
1975	8,802	3.1	4,427	5.4
1980	13,199	3.1	5,283	5.6
1981	14,066	3.2	5,400	5.6
1982	13,726	3.2	5,321	5.6
Retail Trade				
1970	33,112	14.7	11,469	14.9
1975	42,729	15.2	12,715	15.4
1980	67,233	16.0	15,067	15.8
1981	69,775	16.1	15,216	15.8
1982	66,323	15.7	15,198	16.1

Table 1 Continued on Next Page

despite the significant growth experienced in Nevada. The recent recession and depresssed condition in the gaming industry have stimulated interest in the major economic regions of the state to diversify their economies (Governor's Office, 1983). At the same time, assuming such diversification efforts are successful, it will take considerable time for significant shifts in employment patterns to be reflected by the data.

The Role of Government: The role of government is reflected by the specific fiscal program maintained by the political system. A fiscal program is defined as a set of spending and taxation rules and given the fiscal program, the budget balance is determined by the level of state and national economic activity. In Nevada, the political system is highly conservative. In many respects it is difficult to distinguish Republican from Democratic politicians in regard to economic issues. The main distinction is more appropriately one of differences with regard to the degree of conservatism and the degree to which government should minimize its role in the state economy.

Expenditures in the fiscal program are not unusual in terms of categories compared by many other states; however, the level of expenditures devoted to education and social services compared to state population or personal income is considerably lower than most regions of the U. S. The U. S. Department of Education released figures for the nation, that ranks Nevada 51 in terms of spending on K through 12 education. While K through 12 education is primarily a local responsibility, local revenues are tied to state revenues as a result of the tax shift program introduced in 1981. The relative low priority of education, both K-12 and college level, is and will remain a serious constraint to economic diversification.

Taxes are derived from a tax on gaming revenues (the most important single source of tax revenue), various excise taxes, and a general 5.75

percent sales tax. Nevada recently altered its tax structure to rely more heavily on sales taxes, and in the wake of Proposition 13 in California, reduced property taxes. The new administration in 1983 made a small effort to reverse this shift by increasing property taxes, though not to their previous level. Local governments rely primarily on property taxes and a portion of the state sales tax revenue to finance their operations. Nevada does not have an income tax, personal or corporate, nor estate or inheritance taxes. In fact, Nevada has elected not even to accept the minimum federal estate tax credit.

Thus, the fiscal program of the state economy is minimal in terms of expenditures and the tax base is cyclically sensitive. Recent events have shown a greater willingness of Nevada government to adjust expenditures to exogenous changes in tax revenues in order to achieve a legally mandated balanced budget than explore significant revenue enhancements. At the same time, some revenue enhancement efforts have been pursued such as increasing various fees, increased cigarette taxes, moving up collection dates, etc.

Size of the Nevada Economy: The Nevada economy is small by any standard both with respect to the U. S. and the western region. Nevada population as of July 1983 was less than one million individuals. Nevada personal income is less than one percent of U. S. personal income and only slightly over 2 percent of personal income in the Twelfth District of the Federal Reserve System.

ECONOMIC PERFORMANCE OF THE NEVADA ECONOMY

Past Growth Record in the 1970s: Nevada has exhibited one of the most impressive growth records in the past decade. During the 1970s, industrial employment and population grew at annual rates of 5.5 and 4.6 percent, respectively. Personal income in real terms grew at annual rates of 6.1 percent with real per capita income growing at 1.4 percent. These are impressive growth rates and suggest that Nevada has been the fastest growing state in the U. S. during the 1970s.

Past Growth Record From 1980 Through 1982: The performance of the Nevada economy in the first three years of the 1980s ended the debate regarding the degree to which the Nevada economy is sensitive to the national business cycle (Cargill, 1978). Nevada experienced a fairly broad based decline in economic activity from 1980 through 1982. Personal income growth slowed from the high rates of the 1970s (Table 2) and real personal income declined from 1981 to 1982. The unemployment rate increased from 6.3 percent in 1980 to 10.1 percent in 1982. The gaming industry also reflected the slowdown in activity. Gross gaming revenues (gross winnings on all games) grew at 5.9 and 4.0 percent in 1981 and 1982, respectively, compared to previous growth rates well in excess of 10 percent. Employment in the hotel, gaming, and recreation component of industrial employment increased 0.4 percent in 1981 and slightly declined in 1982. Taxable sales declined from 1981 through 1982. The slowdown and decline in taxable sales combined with a 1981 tax shift from property to sales taxes created an adverse budget environment for the state. Tax revenues fell significantly below projections and forced widespread budget cuts to maintain a legally mandated balanced budget.

Relationship Between the Nevada and National Economies: Figure 1 illustrates Nevada and U. S. unemployment since 1970 along with dates for turning points in the business cycle. The data clearly illustrates the cyclical pattern of economic activity in Nevada; however, Nevada has been overall less sensitive to the national swings in economic activity compared to most other states. Before 1980, recessions at the national level were

TABLE 2

SELECTED ECONOMIC INDICATORS FOR NEVADA AND THE U. S.

	Nevada	U. S.
Personal Income (Nominal)		
1976-1980	17.4%	11.7%
1979-1980	15.0	11.0
1980-1981	13.6	12.5
1981-1982	5.7	5.9
1982I-1983I	5.3	5.1
Personal Income (Real)		
1976-1980	7.0%	1.8%
1979-1980	1.3	-2.2
1980-1981	3.0	1.9
1981-1982	-0.4	-0.2
1982I-1983I	1.6	1.5
Total Civilian Employment		
1976-1980	9.7%	2.8%
1979-1980	6.1	0.5
1980-1981	6.9	1.1
1981-1982	1.2	-0.1
1982I-1983I	1.8	-0.6
Unemployment Rates[b]		
1976-1980	6.4%	6.8%
1980	6.3	7.1
1981	7.1	7.6
1982	10.1	9.7
1983	9.0	10.0

Note: [b] Data are seasonally adjusted and the CPI is used to calculate real magnitudes.

Source: Western Economic Indicators, Federal Reserve Bank of San Francisco, Number 3, 1983, and Economic Indicators, Council of Economic Advisers, November 1983.

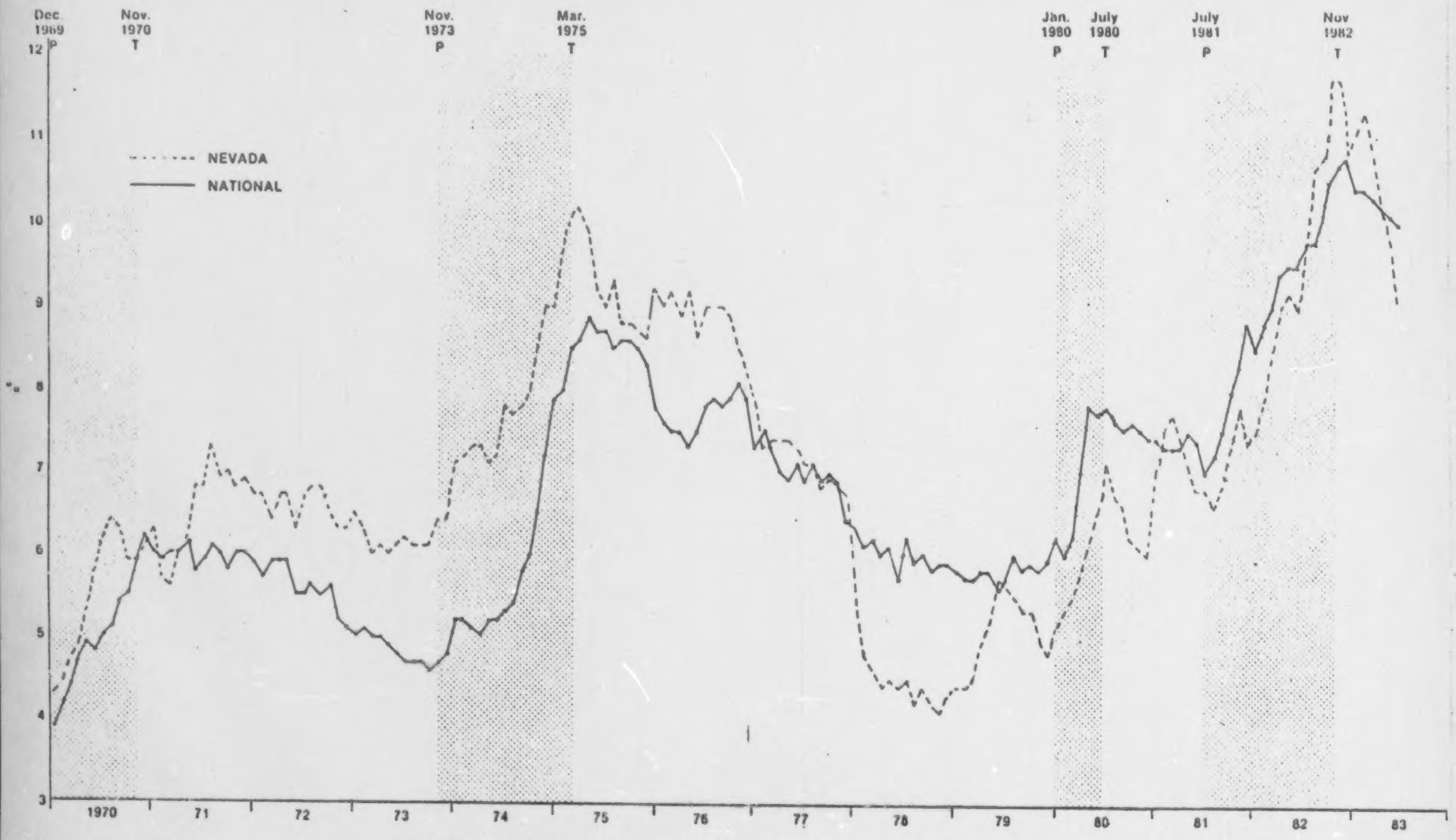

Figure 1: Nevada and National Unemployment Rates (Seasonally Adjusted), January 1970 – June 1983.

reflected only by slower growth rates in various sectors of the Nevada economy. The current Nevada recession is, however, more broad based and severe than previous declines.

THE NEVADA ECONOMY IN 1983

As the U. S. economy entered the current decade, economic conditions had not been as unstable since the Great Depression of the 1930s. By early 1980, the inflation rate had reached almost 20 percent per year, the prime interest rate reached 20 percent, the price of gold and silver had reached record levels, financial markets and institutions were in disarray, and the fact that the U. S. had just "celebrated" the fiftieth anniversary of the Great Depression did not go unnoticed by policymakers and observers. Technically, the U. S. experienced a short but sharp recession from January 1980 through July 1980 followed one year later by another recession from July 1981 through November 1982. The U. S. is currently in the expansion phase of the business cycle. In many respects, however, it is preferable to regard the period from January 1980 through the current period as one of recession and unstable economic activity despite the official turning point chronology published by the Department of Commerce.

Table 2 reports selected Nevada and U. S. economic indicators for the period from 1976 through early 1983. The growth rates and unemployment levels for the second part of the 1970s clearly illustrates the faster growth record of Nevada relative to the rest of the nation. The data suggest two observations about Nevada's more recent economic performance. First, there is a noticeable slowdown in economic activity starting in 1980 which has continued until late 1982. Second, there is little difference in the performance of Nevada relative to the nation in regard to personal income and unemployment rates; however, civilian employment has been less impacted in Nevada than the nation. Third, the timing of the recovery in Nevada has been coincident with the nation as a whole. Figure 1 also suggests a coincident timing relationship.

The data in Table 2 ends with the first quarter of 1983. More recent data suggests that the recovery in Nevada has accelerated and is broadly based with the exception of the mining sector. At the state level and in the three major economic regions, mining contributes a small percentage to total employment; however, for several counties, mining is a major contributor to the economic base. Table 3 presents data on mining's share of nonagricultural payrolls by county over the period from 1969 through 1981. Mining is economically important for much of the rural part of the state; however, even in those areas, mining has not been a stable contributor to economic activity.

TABLE 3

MINING'S SHARE OF NONAGRICULTURAL PAYROLLS BY COUNTY, 1969-81

County	All Years Average	1981	Range%			
			Low		High	
Carson City	1.1%	0.9%	0.1%	(1980)	2.2%	(1969)
Churchill	1.7	5.8	0.4	(1972)	5.8	(1981)
Clark	0.2	0.3	0.11	(1971)	0.3	(1981)
Douglas	0.2	0.1	0	(1975)	0.4	(1969)
Elko	6.3	13.6	2.7	(1972)	13.6	(1981)
Esmeralda	73.3	58.8	70.6	(1975)	89.9	(1977)
Eureka	82.4	75.6	66	(1978)	95.2	(1977)
Humboldt	7.2	9.4	2.8	(1974)	20.7	(1969)
Lander	71.5	68.4	56.5	(1978)	81.1	(1973)
Lincoln	29.9	18.9	9.8	(1972)	44.6	(1975)
Lyon	37.0	20.7	8.5	(1979)	54.3	(1970)
Mineral	6.7	13.5	1.1	(1977)	13.5	(1981)
Nye	9.2	18.0	3.5	(1969)	18.0	(1981)
Pershing	37.0	52.4	26.8	(1978)	52.4	(1981)
Storey	39.9	44.5	20.6	(1976)	60.9	(1980)
Washoe	0.9	1.1	0.7	(1973)	1.3	(1980)
White Pine	36.5	20.0	9.5	(1979)	52.4	(1969)

Source: J. L. Dobra and G. Atkinson, "An Analysis of the Economic Impact of the Mining Industry on Nevada's Economy," Nevada Bureau of Mines & Geology Special Publication MI-1982, The Nevada Mineral Industry, 1982.

The depressed conditions in the mining sector are a result of declining world prices for gold, barite, and copper, Nevada's major export mining product. Nevada also produces rock aggregate in large quantities for the state construction industry; however, rock aggregate production has suffered from the depressed conditions in the construction sector since 1980.

THE NEVADA ECONOMY DURING THE REMAINDER OF THE 1980s

There is no doubt that the Nevada economy is recovering from the recession and there is a good chance that economic growth will characterize Nevada throughout the remainder of this decade. Population is projected to grow at the rate of 4.2 percent per year over the period 1985 through 1990 and the state is making some progress in diversifying the economic base. The relocation of Xebec, a major electronics firm, to the northern Nevada region is one of the first major relocations to Nevada of a non-gaming and high-technology firm. Both the Reno/Sparks and Las Vegas areas are pursuing a variety of approaches to attract similar types of activities. At the same time, gaming and related tourist services will continue to remain the major economic base of the state. As a reflection of the reliance on tourism, Washoe County has recently approved construction of a major world-class ski resort between Lake Tahoe and Reno/Sparks.

The projected growth at the state level will be concentrated in the three major economic regions. Population is projected to grow over the period 1985 through 1990 at annual rates of 4.3, 4.1, and 5.3 percent for Las Vegas, Reno/

Sparks, and Douglas County/Carson City, respectively. Other assessments of potential growth in the Las Vegas and Reno/Sparks areas support these projections. According to W. F. Sprague (1982) in a Federal Home Loan Bank study of the Reno/Sparks area, the area has the potential for significant growth during the remainder of the 1980s.

The overall projection for Nevada in 1984 can be summarized by focusing on the probable levels of three key measures of economic performance reported in Table 4. Personal income in current dollars is projected to increase by 6 percent from 1983 levels, nonagricultural employment is projected to increase by 3 percent from 1983 levels, and the unemployment rate is projected to decline to 7.5 percent in 1984.

The overall projection for 1984 is fairly optimistic at the state level; however, this does not apply to many rural areas. A number of counties are heavily dependent on mining and for reasons discussed above, mining has not taken part in the general recovery. Given reasonable projections in 1984 for metal prices on world markets, it is not likely that recovery will soon return to the mining sector.

SELECTED SPECIFIC ISSUES

There are several key issues important to the economic performance of Nevada and/or the mountain region: the importance and outlook for the mining sector, the fiscal program of the state government, population growth, and interaction between the state and national economy.

The Mining Sector: Mining is important in the rural areas of Nevada, however, it contributes little to the overall economic performance of

TABLE 4

PROJECTIONS OF KEY INDICATORS OF STATE ECONOMIC ACTIVITY

	1983	1984
Personal Income (millions)	$10,969	$11,627
Nonagricultural Employment (thousands)	410	422
Unemployment Rate	9.0	7.5

Notes: 1983 values based on most recent data available.

the state economy. Mining's importance in several rural areas raises serious issues about the economic viability of the rural sector. Metal prices are difficult to forecast and in the past, Nevada mining has been sensitive to changes in world-market conditions. It is not likely that gold and copper prices will quickly recover from present levels. Gold is a speculative commodity and an inverse index of world optimism about the ability of governments to control inflation. Copper and barite prices are sensitive to world economic conditions and oil production, neither of which will rapidly improve in the next year or two. In any event, mining has not been a very stable contributor to economic activity in Nevada and those areas that rely on mining should diversify in whatever direction possible away from mining just as the three major areas should diversify away from gaming.

State Fiscal Program: The most significant tax changes occurred in 1981 when property taxes were reduced by 50 percent, and sales taxes increased from 3.5 percent to 5.75 percent. The new governor and administration in 1983 made some adjustments, but overall the tax structure did not change and is likely not to change significantly throughout the 1980s. Shortfalls in revenue will be offset primarily by expenditure reductions rather than revenue enhancement measures. This, of course, raises a contradiction for the state's expressed goal to encourage economic growth in the 1980s and diversify the economy, especially in the direction of "high technology" operations. The state must restructure the tax base; however, the political environment for such a fiscal program change is not optimistic.

Population Growth: There is no doubt that Nevada will continue to grow at rapid rates for the next decade. Despite the environmental concerns, the current political structure supports population and economic growth. Many areas in Nevada have a high index of "quality of life" and while the resource base is limited, it is unlikely to become a binding constraint in the near future.

Interaction With the National Economy: Nevada is not an economic island unto itself. Policymakers recognize the sensitivity of Nevada to national swings in economic activity and the disadvantages of a narrow economic base. Nevada appears to be either coincident or slightly lagging in response to the business cycle; however, no detailed study of the phase relationship has been conducted to date.

TWO MAJOR ISSUES

There are two major issues with respect to Nevada's economic performance both for the short and long run. First, economic conditions at the national level are currently stable and improving; however, uncertainty over the federal deficit and the future course of monetary policy make it difficult to project the recovery and expansion beyond 1984. Should economic conditions seriously deteriorate at the national level, Nevada's economic performance will be adversely impacted. Thus, the continuation of recovery into 1984 and 1985 assumes an expanding national economy.

Second, the gaming industry of Nevada is showing signs of maturity and slower growth (Dobra and Harris, 1983). The success of gaming in terms of attaining legitimacy and producing high profits has weakened its foundation for rapid growth in the future. The gaming market in the U. S. has increased to some extent along with expanding income; however, Nevada's market share is declining because of increased competition from Atlantic City and the liberalization of restrictions on gambling throughout the

U. S. (U. S. News and World Report, 1983). Gaming will still contribute to economic growth in the future; however, Nevada can no longer rely on this sector. Efforts to diversify are currently underway, but there is considerable uncertainty about whether the process will offset the maturing of the gaming industry to maintain substantial economic growth.

This raises an important issue about population projections for the Nevada economy over the next several decades. Observers both in and outside the state forecast that Nevada will be the fastest or one of the fastest growing states in the U. S. However, these population projections are related to the past growth of the gaming sector which provided the major growth force during the 1960s and 1970s. To the extent that the gaming sector will exhibit slower and/or unstable growth in the future, population growth should be significantly adjusted downward.[2]

FOOTNOTES

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[1] There are 16 counties in Nevada: Churchill, Clark, Douglas, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe and White Pine. In addition, Carson City, the state capital, is an independent city with the same status as a county. Douglas County, which includes the South Lake Tahoe area, is combined with Carson City as one region since they are geographically and economically close to each other.

[2] This point is also stressed by Dobra and Harris (1983).

REFERENCES

Cargill, T. F., 1983, "The Nevada Economy: Past, Present and Future," The Southwestern Review, Vol. 2, Fall.

Cargill, T. F., 1978, "Is the Nevada Economy Recession Proof?" Nevada Review of Business and Economics, Vol. 2, Summer.

Governor's Office, State of Nevada, 1983, "Overview of Economic Development and Diversification," Background Paper, 83-9.

Sprague, W. F., 1982, The Reno Area Economy and Housing Market: Current Outlook and Longer Term Prospects, Federal Home Loan Bank of San Francisco, October.

Dobra, J. L. and Harris, T. R., 1983, "The Commercial Structure of Nevada's Economy and Prospects for Development," Nevada Review of Business and Economics, Vol. 7, Fall.

WYOMING

Wyoming's Near-Term Economic Outlook:

Modest Growth in the 1980s*

by

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ABSTRACT

This paper examines the near-term outlook for Wyoming's economy, probable trends in state tax revenue collections that result from the outlook, and explores what, if any, steps might be taken by public or private agencies to improve the outlook. The general economic outlook is for only modest growth. In real terms, state severance tax collections will vary little from FY 83 levels. Sales tax collections also are likely to exhibit little real growth. A number of policy options might be pursued in order to partly influence the outlook in a positive manner, including a realistic state program of economic diversification and measures to stimulate coal production by reducing the monopoly power of the railroads.

1. Introduction

The rapid escalation of energy prices experienced by the United States during the 1970s has had a vastly different economic impact on energy consuming versus energy producing states. For example, Miernyk, Giarratani, and Socher (1978) estimate that between 1967 and 1974, the national direct and indirect gains in value added arising from price increases on crude oil, natural gas, and coal amounted to $24.2 billion. On a geographic basis, however, these gains were unevenly distributed; very few accrued to the energy-importing northeastern states, while disproportionately large gains accrued to energy-exporting states in the West and Southwest. Wyoming, which produces significant quantities of all four major energy commodities (crude oil, natural gas, coal, and uranium), was one of the most significant gainers when the terms of trade shifted in its favor. As described more fully in Gerking and Merrifield (1982), during the decade of the 1970s Wyoming enjoyed: (1) an increase in real per capita personal income of 41 percent, (2) a 65 percent increase in total employment, (3) nearly a nine-fold increase in state sales and mineral production tax collections, and unemployment rates consistently close to 3.5 percent.

Since the early 1980s, however, the rate of economic growth in Wyoming has been considerably slower. For example, in the first two quarters of 1983, the state unemployment rate exceeded 10 percent. Also, both severance, sales and use tax collections were lower in FY 83 than FY 82. There are currently 511 shut in natural gas wells in the state and the drilling rig count hit record low levels in early 1983. Although many factors may have been responsible for this reversal in economic fortunes, there are three which appear to have been particularly important. First, the price of crude oil fell both in nominal and real terms during 1983, thus altering the terms of trade in favor of oil consuming states and against oil producing states such as Wyoming. Second, the recent recession has left the quantities of energy commodities demanded at unusually low levels. For example, with electricity generating facilities operating at well below capacity, fuel stockpiles have been increasing, thus depressing current production. Third, the price induced energy conservation stimulated in the 1970s has lowered the GNP elasticity of national energy demand from about 1.0 in the mid-1960s to a current figure of approximately 0.4. Consequently, as the nation began to pull out of recession, there was a reduced stimulus to energy demand, i.e. a 10 percent increase in GNP would drive up energy consumption by 4 percent rather than 10 percent.

The purpose of this paper is to draw upon the events just noted in order to make some near-term predictions about the future course of the Wyoming economy. Section 2 takes an economic base perspective in analyzing each of Wyoming's three major export sectors: (1) mining, (2) agriculture, and (3) travel. Projected developments in those sectors are then translated into changes in population, employment and per capita personal income. Section 3 builds on this material in order to evaluate Wyoming's prospects for collecting severance and sales tax revenue. In addition to other important factors, this section treats the crucial role played by crude oil prices in determining state tax collections. Section 4 contains concluding remarks which focus on the question of what, if anything, can be done by public and/or private organizations in Wyoming to improve the economic outlook.

2. The Export Sector

Unlike many states, where output from the manufacturing sector makes up the bulk of sales to residents of other states, Wyoming's major export industries are mining, agriculture, and travel. As discussed in Gerking and Merrifield (1982), mining currently ranks as the most important of the three in terms of the total value of income generated. Consequently, that sector is treated first and in the greatest detail by giving separate consideration to each of the major minerals.

Crude Oil

Wyoming's output of crude oil has fallen at a gradual rate in nearly every year from 1970 to the present. Taxable crude oil production in 1970 was 155.7 million barrels, while in 1982 the corresponding figure was 108.0 million barrels. One problem with maintaining constant rates of oil production is finding enough new oil so that declines in the older fields, most of which have been in production for over 50 years, are offset. For the near-term, at least, this difficulty has been at least partially overcome. Indeed, thanks in large measure to relatively new discoveries including the Amos Draw field complex, the Powell II unit, and the Overthrust Belt, some moderation in the rate of production decline is expected. As a result, Wyoming's crude oil production still may lie above the 100 million barrel mark in the second half of this decade.

The price of crude oil will be another pivotal concern. Barring any major disruptions in Mideast oil supplies, Wyoming Geological Survey officials expect the price to fall to $26.00-$26.50 per barrel during 1984, before recovering to about $27.00-$27.50 per barrel. However, such modest price fluctuations are not viewed as significant enough to have a major impact on production levels.

Exploratory drilling is expected to recover from a low of 58 rotary rigs active in the state in May 1983 to pre-boom levels. By December 1983, the rig count had climbed to 137. However, industry officials warn that exploration in coming years could be severely hampered by government regulations and the withdrawal of large tracts of land from exploration. Many of the remaining major structures with oil potential are located on federal lands, often in areas that spark controversy when drilling is suggested, such as wilderness areas, special review areas, and forestlands. Industry officials also cite a plethora of regulations that govern drilling in less sensitve areas, regulations they contend restrict access and inflate operating costs. Therefore, the likelihood of large, new discoveries that would reverse the production declines experienced in the older fields would appear to be quite small.

Natural Gas

Gas production is expected to increase in the near-term, but little new exploration is forecast. What new gas is discovered is expected to occur mainly in association with new oil wells. At present, Wyoming has a large gas surplus. In February 1984, 511 gas wells were shut-in. Assuming that Wyoming's shut-in wells have the same production capacity as its 1,189 producing wells, the shut-in wells alone could produce an additional 200 billion cubic feet of gas per year. And since the shut-in wells include some prolific producers in the Overthrust Belt, the production potential is probably even higher.

The wells are shut-in for a variety of reasons. Some are shut-in until pipelines are built to them. Others are shut-in pending completion of processing plants built for the purpose of removing hydrogen sulfide associated with gas finds in western Wyoming. Many are shut-in because there is no market for the gas at the prices demanded by suppliers (often gases produced at great depth or derived from tight gas sands in which development costs are high). Still others are older wells which are subject to price controls under the Natural Gas Policy Act (NGPA) of 1978. Prices for such gas are usually substantially lower than prices for gas found after 1977. Curiously, lower priced gas wells sometimes are shut-in during periods of low demand because buyers have higher priced gas contracts with "take or pay" provisions. In other words, even if a buyer does not take the gas, he must pay for it. Other reasons are technical. If a producer has the choice of shutting-in a conventional gas well or an oil well that produces casinghead gas, for example, the producer will usually choose to shut-in the conventional gas well, since there is greater risk of reservoir damage when shutting in oil wells than when shutting in gas wells.

Wyoming's current gas surplus is the result of federal action, lower demand during the recession, and conservation. The NGPA stimulated a high level of gas exploration, providing price incentives to drill deep wells for gas. The resultant gas could be sold at higher prices, reflecting higher development costs. At the same time gas exploration increased, however, recessionary forces and conservation efforts curtailed the quantity demanded. At present, while there seems to be some recovery in gas sales, there is little market for gas within the higher price ranges. It is estimated that Wyoming's current gas surplus will continue for a period of from 2 years to 5 years. However, because of gas already under development, gas production in Wyoming is expected to increase despite little new exploration.

According to consensus projections developed among several state government agencies, taxable gas production is expected to increase from 376.5 million mcf in 1984, to 402 million mcf in 1986.

Coal

Coal production is expected to increase through 1988 at a rate of 5-6 percent per annum. Such growth will result mostly from contracts signed during the 1970s, rather than from new demand. According to Jones (1983), production is expected to reach 114 million tons in 1984 and 125.8 million tons in 1985. Even so, production is expected to run below contracted tonnage through 1987.

Cancellations of power plants, reduced demand due to the recession, and energy conservation all have contributed to reduced rates of increase in coal output. Due to cancellations of power plants that intended to use Wyoming coal, 24 million tons worth of annual production was lost. Moreover, even if these decisions were reversed these plants would not be operational before 1990. With the requirement of scrubbers on new power plants, Wyoming's low sulphur coal has lost some of its competitive advantage. High transportation costs to distant markets have caused many utilities to switch from Wyoming coal to cheaper local alternatives. In Texas, for example, many utilities have switched from Wyoming coal to local lignite and currently consume approximately 30 million tons of lignite.

This eroding competitive position could be further aggravated if Congress mandates the retrofitting of scrubbers on existing coal-fired plants, eliminating the option to burn compliance coal without using scrubbers, in its attempts to reduce the acid precipitation. However, no acid precipitation legislation is likely to pass before 1985.

At present, most Wyoming coal mines are operating at well below designed production capacities. The Cordero Mine in Campbell County, for example, reportedly has 24 million tons of silo capacity, but currently produces only about 10 million tons of coal per year. Some mines reportedly have renegotiated contracts at $6-$8 per ton, are probably operating at a loss, and are in production simply to retain federal leases.

One indication of the changing market is reflected in attitudes toward reopener clauses in production contracts. During the early phase of the coal boom, the coal companies wanted such clauses and the utility companies opposed them. Now the situation is just the reverse, with utility companies demanding reopener clauses in order to take advantage of soft coal prices, and the coal companies opposing them.

Despite difficulties, coal production is expected to reach record levels each year throughout the 1980s, reaching 150.9 million tons by 1989. Wyoming is expected to consistently rank among the top three coal-producting states in the nation.

Other Minerals

The uranium industry in Wyoming has been beset by hard times, declining from 17 operations in 1978 to just five in 1984. The decline can be attributed to concerns about nuclear power plant safety, escalating nuclear plant construction costs, lower demand for electric power, and competition from low-cost, high-grade Canadian and Australian ores.

Two graphic illustrations of the severe reversals suffered in the industry nationwide are the cases of the Washington Public Power Supply System (WPPSS) and the William H. Zimmer plant at Moscow, Ohio. In July 1983, WPPSS defaulted on $2.25 billion worth of bonds sold for nuclear power plant construction in the Northwest. It was the biggest municipal bond failure in history. And after being 97 percent completed at a cost of $1.7 billion, current plans call for the 810-megawatt William H. Zimmer plant to be converted to a coal-burning plant.

No improvement in Wyoming's uranium production is forecast in the near-term. Taxable production is expected to decline from 1.6 million tons in 1983 to perhaps as little as .50 million tons by 1986.

Trona is a water-bearing bicarbonate compound used in glass making and in the chemical industry. The shift away from glass to plastic containers will adversely effect the trona industry, although increases in demand for housing and auto glass could help offset the negative impacts. Trona production is expected to remain relatively constant in the near-term. In 1982, state trona production was 10.1 million tons.

With the closure of the U.S. Steel Corporation iron mine at Atlantic City during 1983, iron ore mining in Wyoming has ceased. Prohibitive costs of labor, utilities, and transportation were cited in the closure. When in full operation, the Atlantic City Mine employed more than 400 workers and produced 5 million tons of ore each year. Earlier, the Sunrise Mine in eastern Wyoming was also closed.

Agriculture

The agricultural sector of Wyoming's economy is dominated by the production of livestock and livestock products. In 1982, 78 percent of all agricultural cash receipts were for livestock and livestock products.

Total net farm and ranch income in Wyoming (after inventory adjustments) has been declining since 1979 (Wyoming Crop and Livestock Reporting Service, 1983), hitting a low of -$56.2 million in 1982. Thus, many farms and ranches operated at a loss.

The sheep industry in Wyoming has been in a state of decline for several years. In 1974, 1,800 sheep and lamb operations existed in Wyoming; by 1982, the number had dropped to 1,500 (Wyoming's Crop and Livestock Reporting Service, 1983). During the same period, the total number of sheep dropped from 1.5 million to 1.06 million head.

Industry spokesmen cite a number of reasons for the decline, including foreign competition, operating costs, market conditions, and contaminants that reduce wool and hide quality (such as the parasitic sheep ked and marking paints that turn to dyes in wool processing). Predation losses also are cited. In 1982, 52,800 lambs were lost to predators, with a total dollar value of $2.2 million (Wyoming Crop and Livestock Reporting Service, 1983).

A number of factors could influence the course of the sheep industry in the near-term. Widespread use of topical agents designed to combat sheep ked infestations and the use of alternative marking methods could result in improved wool quality. New blends of wool and cotton for use in warmer climates may prompt new demand. Attempts are being made at the national level to market lean lamb products, following trends in market demand for leaner meats. Modifications of bans on such predator poisons as 1080 might help reduce lamb losses, although the associated environmental consequences of such actions are matters of great controversy. In a more negative vein, in 1985 the Wool Act is expected to be reviewed. If the act is repealed, wool incentive payments would be removed and the decline in the industry almost certainly would be accentuated.

In addition, trends in the sheep industry nationally have been away from large range bands toward smaller (and often better quality) farm flocks, as operators attempt to diversify. In Wyoming, industry spokesmen note a tendency away from large range bands consisting solely of sheep to operations consisting of both cattle and sheep. Such a trend might be expected to result in fewer sheep numbers in future years, although at some point total numbers should stabilize. In any case, while prices may improve with the general economy, the near-term outlook is for little improvement in the industry overall.

Cattle numbers have remained relatively constant in Wyoming during recent years, while the number of operations with cattle has dropped. In 1983, cattle numbers reached 1.5 million head, the largest number since 1977, while between 1977 and 1982, the number of operations with cattle dropped from 6,700 to 5,500.

Industry spokesmen expect some improvement in prices during 1984. But for individual operators, the outlook is in direct relationship to the nature of the operation and the amount of money borrowed. Many larger operations have been purchased by wealthy individuals, who will hold the land for long-term investment purposes regardless of market conditions. At the other end of the scale, many small operators will augment livestock income with off-farm income. Those who attempt living solely from ranch earnings and have substantial mortgage debts will have the greatest difficulty. While some improvement in prices is seen for 1984, unless the general economic recovery continues at a very strong pace, industry observers say prices still could be $10-$15 per hundred weight too low to ensure real economic health in the Wyoming cattle industry.

Travel

U.S. travelers spent over $738 million in Wyoming during 1981, according to U.S. Travel Data Center (1982) figures. This represented nearly an 8 percent increase over 1980, and a 53 percent increase over 1977. However, much of the increase can be attributed to inflation rather than real growth. Despite the recession, peak season visitations to Yellowstone National Park have remained relatively constant in recent years. During the third quarter of 1983, 1.7 million persons visited

Yellowstone Park, compared with 1.6 million for the same period in 1982 and 1.[illegible] million during the third quarter of 1981. As the national economy continues to improve, the outlook for tourist travel is good. With lower rates of unemployment and increased rates of economic activity in other parts of the country, Wyoming can expect increases in tourist visitations. Due to limits on the number of accommodations available in Yellowstone Park and Grand Teton Park, peak season visitations to these areas are not expected to grow substantially from the levels achieved in recent years. However, the Wyoming Travel Commission expects some growth in "shoulder" season visitations, during both spring and fall. In the near-term, Travel Commission officials suggest that a 5-6 percent real growth rate in annual travel spending in Wyoming might be a realistic expectation.

Employment, Income, and Population

The developments in the export sectors just cited translate into much lower projected rates of economic growth than Wyoming experienced during the 1970s. Moreover, Wyoming's recovery from the recession has lagged behind the nation as a whole. While there have been some positive signs, the recovery has not manifested itself strongly throughout a broad range of economic activity. And while the unemployment rate dropped from a high of 10.6 percent during the first quarter of 1983 to 7.7 percent during the third quarter of 1983, much of the change has been attributed to persons leaving the state who could not find work rather than to expansion of the economy. Total employment for the third quarter of 1983 was virtually unchanged from the third quarter of 1982, and 3 percent less than for the third quarter of 1981.

In the near-term, only modest labor force growth is forecast. Per capita income ($12,372 in 1982), bolstered by high wages in the mining sector, is expected to remain high. However, total employment is expected to increase slowly. Employment in the mining sector is expected grow from 39,104 in 1984 to 40,716 in 1985 (Wyoming Department of Administration and Fiscal Control, 1983). Employment in agriculture is expected to exhibit virtually no change.

One of the stronger performances in coming months could be accomplished in the construction sector. With a number of new projects--including additional highway construction, possible construction of major gas sweetening plants in southwestern Wyoming, and the MX missile project in eastern Wyoming--the construction sector could exhibit considerable relative strength in the near-term.

Total state employment is expected to rise from 275,689 in 1984 to 280,864 in 1985. Total population of the state is expected to increase from 495,754 in 1984 to 521,819 in 1986.

3. State Revenues

As previously indicated, this section presents a detailed examination of state revenues with emphasis on the role of crude oil prices in determining state severance and sales tax collections. The exclusive focus on severance and sales and use taxes is warranted since, as shown in Gerking and Merrifield (1982, p. 43, Table 6), those two sources combined accounted for nearly 90 percent of Wyoming's tax revenue (Wyoming has no personal income or corporate profits taxes). In addition, in FY 83, those two tax sources each accounted for approximately one-third of all monies accruing to the state's general fund. The remainder of general fund revenues comes from sources such as gasoline, cigarette, and inheritance taxes, fines and user charges, as well as from interest income generated by various trust funds. Since the trust funds originally were created out of unspent severance tax revenues, the severance tax contribution to Wyoming's general fund actually is larger than one-third. The first part of this section treats the severance tax while the second part treats the sales and use tax.

Severance Taxes

Over the period 1970-1982, Wyoming's severance tax collections rose by an almost unbelievable factor of 94.2, from \$4.1 million to \$386.1 million. As a result of this increase, the severance tax no longer is a minor source of state revenue; rather it is now the most important single state level revenue source to Wyoming. Consequently, forecasts of the future course of severance tax revenues are critical to planning efforts undertaken by the Wyoming state government. This subsection presents the qualitative forecast that in real terms, severance tax collections are unlikely to be substantially different over the next few years than they were in FY 83. A convenient way to justify this prediction is to first consider why severance tax collections rose so dramatically over the period 1970-1982.

Severance tax collections on the ith mineral produced in Wyoming are determined by the simple definitional formula shown in equation (1)

$$S_{ir} = P_{ir} \times Q_{ir} \times t_{ir} \qquad (1)$$

where S_{ir} denotes severance tax collections in year r on mineral i (i = crude oil, natural gas, coal, uranium, and trona), P_{ir} denotes the average price at which mineral i was sold in year r, Q_{ir} denotes the quantity of i produced in year r, and t_{ir} denotes the ad valorem severance tax rate on mineral i in year r. Equation (1) indicates, then, that any alterations in S_{ir} must arise from price, quantity, or tax rate changes. The calculations presented in Table 1 are designed to show the relative contribution of each of those three factors for each mineral. More specifically, each entry in Table 1 shows a factor of increase in a 1982 value in comparison with a 1970 value. Thus, for example, the average price received per barrel of crude oil produced in Wyoming was 10.22 times higher in 1982 than in 1970, the quantity of crude oil produced in 1982 was 76 percent of its 1970 counterpart, and the tax rate applied to the value of crude oil production was six times higher in 1982 than in 1970. Multiplying these factors of increase together yields the result that severance tax collections on crude oil were 46.60 times higher in 1982 than in 1970.

Even a casual inspection of the figures presented in Table 1 yields the conclusion that increases in prices and tax rates were largely responsible for the rapid growth in severance tax collections. With the exception of coal, which experienced a rise in production by a factor of nearly 15, price and tax rate increases overwhelmed any increases in

TABLE 1

INCREASE IN SOURCES OF

SEVERANCE TAX REVENUE FROM TAXABLE MINERAL PRODUCTION: 1970-82

MINERAL	PRICE	QUANTITY	TAX RATE	TOTAL
CRUDE OIL	10.22	.76	6.0	46.60
NATURAL GAS	21.47	1.35	6.0	173.91
COAL	5.88	14.77	10.5	911.90
URANIUM	2.46	1.03	5.5	13.53
TRONA	3.28	2.50	5.5	45.18

Source: Wyoming Department of Economic Planning and Development, Mineral Yearbook, 1975 and 1982.

quantity produced. Moreover, in the case of crude oil (as discussed in Section 2), production actually fell over the time period considered, showing a small percentage decline in almost every year, and production of uranium rose by only 3 percent. This conclusion regarding the importance of price and tax rate increases is reinforced by considering the relative contribution of each of the five minerals to total severance tax collections. As shown in Table 2, crude oil and natural gas, which experienced by far the largest factors of price increase, accounted for 90 percent of total state severance tax collections in 1970. Furthermore, in 1982, despite the rapid growth in coal production, those two energy commodities still accounted for 67 percent of total state severance tax collections.

TABLE 2

PERCENTAGE CONTRIBUTION
TO SEVERANCE TAX COLLECTIONS
BY MINERAL: 1970 and 1982

MINERAL	1970	1982
CRUDE OIL	.83	.49
NATURAL GAS	.07	.18
COAL	.03	.30
URANIUM	.04	.01
TRONA	.03	.02

To this point, then, the discussion has isolated price and tax rate changes as being overwhelmingly important factors in driving up severance tax collections. Among all such changes reported in Table 1, increases in the price of crude oil perhaps have been the most crucial since crude oil is the fuel preferred by many large industrial users. When its price rose so dramatically between 1973-79, an umbrella was created beneath which prices of other fuels and ad valorem taxes on those fuels could rise. In fact, a major purpose of NGPA was to allow historically regulated natural gas prices to rise to levels that are comparable with those on refined oil products. Also, coal prices will tend to rise with increases in crude oil prices since those two fuels are substitutes in the generation of electric power.

The important role of crude oil prices in determining severance tax collections also can be demonstrated by considering the evidence from FY 83 as well as a short term forecast made by Governor Herschler's Consensus Revenue Estimating Group (Wyoming Legislative Service Office, 1983). Those figures, together with parallel data from FY 82, are presented in Table 3. As shown in the table, the average price received per barrel of crude oil produced in Wyoming fell from $32.25 in FY 82 to $28.85 in FY 84 and taxable output in those years dropped from roughly 112 million barrels to 105 million barrels. With the recently emerging national excess supply of natural gas, which is related in part to the relative abundance of lower priced oil, Wyoming's output of natural gas fell short of expectations, with production actually falling in 1983 as compared with 1982. Moreover, given lower oil prices together with stockpiles of coal accumulated when the demand for electric power was depressed during the recent recession, coal prices rose only slightly from FY 82 to FY 84 and coal output showed only modest gains. Additionally, severance tax rates were unchanged between FY 82 and FY 84 and the taxable valuation of other minerals including uranium and trona were largely falling over that time

TABLE 3
SEVERANCE TAX COLLECTIONS BY MINERAL: 1982-1986[a,b]

MINERAL	1982[c]	1983[d]	1984[e]	1985[e]	1986[e]
CRUDE OIL					
PRODUCTION (millions of bbl)	111.9	108.0	104.9	102.8	100.7
AVERAGE PRICE/BBL	$32.25	$29.45	$28.85	$29.75	$30.25
TAX RATE[f]	.059	.059	.059	.059	.059
TAX REVENUE (million of $)	$212.92	$188.7	$178.6	$180.4	$179.7
NATURAL GAS					
PRODUCTION (millions of mcf)	353.0	351.2	363.5	376.5	389.3
AVERAGE PRICE/MCF	$2.77	$3.22	$3.55	$3.90	$4.30
TAX RATE	.06	.06	.06	.06	.06
TAX REVENUE (millions of $)	$58.7	$67.9	$77.4	$88.1	$100.4
COAL					
PRODUCTION (millions of tons)	98.4	104.0	104.0	109.4	120.8
AVERAGE PRICE/TON	$10.05	$10.71	$10.90	$11.40	$11.90
TAX RATE	.105	.105	.105	.105	.105
TAX REVENUE (millions of $)	$103.9	$116.9	$119.0	$134.0	$150.9
URANIUM					
PRODUCTION (millions of tons)	4.6	2.1	1.6	1.5	1.4
AVERAGE PRICE/TON	$16.93	$21.69	$21.58	$22.63	$23.67
TAX RATE	.055	.055	.055	.055	.055
TAX REVENUE (millions of $)	$4.3	$2.5	$1.9	$1.9	$1.8
TOTAL SEVERANCE TAX					
COLLECTIONS (millions of $)	$388.2	$384.2	$385.6	$410.7	$442.7

[a] Severance taxes are paid based on the previous years production of each mineral. Therefore, the tax revenue figures shown are for the year indicated at the top of each column; but the production figures are taken from the previous year.

[b] All production figures are for net taxable, rather than total production. Net taxable production excludes federal, state, and Indian royalty payments and is a fairly constant 90, 80, 96, and 100 percent respectively of total crude oil, natural gas, coal, and uranium output.

[c] Actual figures.

[d] Estimated tax revenue figures.

[e] Projected figures.

[f] Tax rate on the value of oil production is 6 percent except for stripper oil on which the tax rate is 4 percent. Effective rate shown is calculated by (.04)(.05) + (.06)(.95) = .059 since stripper well production accounts for approximately 5 percent of total production.

[g] Includes severance tax collections on trona and other minerals which historically have accounted for about 2.3 percent of total Wyoming severance tax collections.

Sources: Wyoming Department of Economic Planning and Development, Mineral Yearbook, 1983.
Wyoming Department of Revenue and Taxation, Ad Valorem Tax Division, Annual Report, 1983.
Wyoming Legislative Service Office, "Taxes on Wyoming Minerals: History and Projections," October, 1983

period. As a consequence, the very rapid historical growth in severance tax collections ground to a halt; total severance tax collections fell from $388.2 million in FY 82 to $384.2 million in FY 83.

According to the Governor's Revenue Estimating Group's projections, total severance tax collections are not expected to rise above their FY 82 levels until FY 85. As shown in Table 3, these projections are based upon assumptions regarding future values for taxable production, price, and tax rates for each of four minerals. The Group anticipates no change in any of the severance tax rates and only a modest gain of $1.45/bbl. in oil prices over the period FY 84 - FY 86. This price forecast is consistent with the view of Lichtblau (1983) who argues that crude oil prices in real terms will be roughly constant during the remainder of 1980s, barring any "surprises" such as a full scale war in the Middle East. The forecasted increase in crude oil prices, however, is expected to be almost exactly offset by falling taxable production levels. Also, despite a small expected increase in uranium prices, production of it is likely to be depressed. Severance tax collections on uranium for FY 84 - FY 86 are expected to be below current levels, although the effect of this event on total severance tax collections cannot be large in view of uranium's comparatively small valuation base. As a consequence, the modest growth projected in total severance tax collections must come from coal and natural gas. Both of these fuels are expected to experience rising price and output levels over the coming two fiscal years. In the case of natural gas, price increases are scheduled to occur as that fuel is deregulated under the NGPA. The rise in coal prices and coal output is expected to come about through the provisions in the producers long-term contracts with utilities as discussed in Section 2.

Sales and Use Taxes

Over the period FY 70 - FY 82 total, sales and use tax collections in Wyoming increased by a factor of 8.9, from $30.9 million to $275.4 million (Wyoming Department of Revenue and Taxation, 1983). The state imposed portion of the tax was levied at a rate of 3 percent over the entire period; however, in 1973 counties were enpowered to levy an additional 1 percent tax. In the 15 counties which have elected to impose this 1 percent local option, the state receives one-half of total sales and use tax collections, while in the remaining 7 counties, the state's share is two-thirds. Thus in FY 82, the state's sales and use tax receipts came to $160.7 million, all of which were credited to the General Fund. That figure compares with $113.7 million credited to the General Fund during FY 82 from all severance tax sources.

Similar to the case of severance tax collections, FY 83 sales and use tax collections were lower than their FY 82 counterparts; $230.5 million as compared with the $275.4 million figure given above. This decline in total collections translates into a reduction in General Fund revenues by nearly 8 percent, or $28.1 million. As might be expected, the drop in sales and use tax collections together with the prospects of only modest near-term growth in severance tax collections, has raised substantial concern in the current legislative budget session over the extent to which the state is able to finance a broad range of public programs.

To see why tax revenues from this source fell off so sharply in FY 83 as compared with FY 82, consider the empirical estimates shown in Table 4. Those estimates are obtained by running a regression using pooled cross-sectorial and time series data drawn from each of Wyoming's 23 counties over the period 1973-82. The dependent variable was the natural logarithm of total county sales tax collection and the explanatory variables, with the exception of 22 county specific intercept-shift coefficients, are listed in Table 4. Use tax collections, which are less than 10 percent of sales tax collections, are not included in the dependent variable since the two components probably should be modeled differently. Also, the complete regression results which include the estimates for the county specific intercept shifts are available from the authors on request.

TABLE 4

DETERMINANTS OF WYOMING'S

SALES TAX COLLECTIONS 1973-82

EXPLANTORY VARIABLE	COEFFICIENT	T-STATISTIC
CONSTANT	.984	1.42
POPULATION[a]	1.399	18.58
PER CAPITA INCOME[a]	.704	9.99
PER CAPITA EMPLOYMENT[a]	.199	1.52
UNEMPLOYMENT RATE[a]	-.091	-2.41
LOCAL 1% OPTION[b]	.173	6.81
AVERAGE CRUDE OIL PRICE[a]	.183	6.13

$R^2 = .9918$

a = measured in natural logarithms

b = dummy variable which equals unity if county has imposed local 1% option; zero otherwise

Table 4 suggests that population and per capita income are the two strongest determinants of total county sales tax collections. The population elasticity of sales tax collections is 1.4 and the per capita income elasticity of the sales tax is .70. Unemployment rates, crude oil prices, and the local 1 percent option dummy also significantly contribute to explaining the variation in sales tax collections. The role of crude oil prices is particularly interesting to observe in this connection.

Table 4 indicates that the elasticity of sales tax collections with respect to crude oil price changes is approximately .18. Hence, since crude oil prices fell by 8.7 percent between FY 82 and FY 83 (see Table 3), the direct effect of this variable above accounts for 1.6 percent of the 8 percent decline in sales tax collections cited previously. Additionally, the direct effect of crude oil price reductions probably understates the total effect. Reductions in crude oil prices affect the general level of economic activity in Wyoming. As a consequence, sales tax collections also would tend to fall due to the indirect influence of crude oil prices on population, per capita income, and unemployment. These indirect effects are not explicitly modeled here; nevertheless, Table 4 still suggests that the impact of declining crude oil prices on sales tax collections probably is substantial.

Because of the role played by the price of crude oil in determining severance and sales tax collections, the outlook for future growth in state revenues is necessarily pessimistic. As previously discussed, many observers of the petroleum market are making projections of no increase in real crude oil prices over the remainder of this decade. Moreover, since these prices are determined internationally and since any single state's percentage of world crude oil output is small, there would appear to be little that Wyoming can do to directly and immediately improve its economic outlook. Wyoming rode the rapidly rising crude oil prices through a period of economic growth and prosperity from 1970 to 1982. For the present, however, the growth has virtually ceased; a situation that has shaken at least the feeling of prosperity even though no declines in per capita income are anticipated. At least two interrelated policy options, however, might be considered (or already are being considered) by state government for the purposes of improving Wyoming's long-term economic outlook and/or stabilizing its tax collections. These policies, which are briefly described and evaluated in Section 4, are: (1) to pursue strategies that would lead to greater diversification of the state's economy, and (2) further develop Wyoming's energy sector.

4. Two Policy Options

Economic Diversification

Similar to many states which recently have experienced declining economic fortunes, Wyoming now is considering a plan to diversify its economic base. Within the last year, for example, the Governor appointed an Industrial Development Task Force which recently made recommendations (Wyoming Governor's Industrial Development Task Force Report, 1984) on how to add new industries to Wyoming's economic structure as well as how to retain and promote existing industries. Central to the suggestions made by the Task Force was the creation of an Economic Development Board within the executive branch of state government. The Board, which would operate on a biennial budget of about $900,000, would be responsible for taking a series of steps designed to encourage investment, ease regulatory encumbrances, streamline the permitting of major industrial facilities, and identify and aid in recruiting businesses and industries that are the most likely candidates for relocation in Wyoming.

To achieve these ends, the Board might reasonably perform five overlapping functions. First, it could serve as an information clearing house for industries interested in relocating in Wyoming. The information provided would include labor force, county profile, population, transportation, and local credit market data. Second, the Board might provide strategic market analyses, including investigations of international markets for Wyoming products, of barriers to the penetration of new markets, and of possible new products not currently produced in the state. Third, the Board could serve as an intermediary between industries wishing to locate in the state on the one hand, and local governments and organizations on the other. Fourth, the Board could help promote Wyoming products in broader markets, where appropriate, and help with promotions to attract new industries. The focus would be on highly targeted efforts among firms with a relatively high probability of eventually locating in the state. Fifth, and finally, the Board could monitor laws and legislation affecting the business community. Appropriate changes to encourage business expansion then could be explored.

At the limited scale proposed, the activities of the Economic Development Board may well be cost effective. The addition of one new large firm every two or three years may be enough to make the whole program a success. However, there are basic difficulties in assuming either that Wyoming can control its economic destiny or that any meaningful economic development and diversification objectives can be achieved quickly. Constraints on making progress on either of these two fronts include the state's small population base and labor force, poor transportation network, and inhospitable climate, particularly as compared with the more rapidly growing Sun Belt states. Moreover, since taxes applied to non-energy industries are already quite low by national standards, there would appear to be few financial inducements that the state could even offer unless, of course, outright subsidies are considered. If, however, a substantial increase in economic diversification could be achieved, the tax base would broaden, the influence of the international energy market would be reduced, and the annual pattern of tax collections would be more stable.

Further Develop the Energy Sector

While Wyoming cannot appreciably affect international oil prices or the growth of gross national product, it can more aggressively market coal, its most abundant resource. Achieving this objective, however, requires a reduction in coal transportation rates. Many observers feel that the monopoly power of the Burlington Northern and Union Pacific railroads must be reduced to bring these rates down and consequently increase the demand for Wyoming coal. Atkinson and Kerkvliet (1983) estimate that a 5 percent reduction in rail rates per ton mile for coal customers would result in an 8 percent increase in coal sales. Electric utilities purchase 97 percent of Wyoming's coal. For the largest purchasers of Wyoming coal in the Midwest and Texas, rail rates make up as much as 75 percent of the delivered price. As a consequence, a 5 percent reduction in rail rates would drive down delivered coal prices by 3.75 percent (.05 x .75 = .0375).

By reducing rail rates in this fashion, and hence the delivered price of coal, the severance tax dollars earned by the state will increase. That is, since the severance tax on coal is levied on the mine-mouth value of production, reduced rail rates will increase the quantity sold but will not alter the value of each ton which is subject to tax. Moreover, since coal employment, income, and population will increase with coal sales, sales tax collections will increase as well.

With reduced rail rates, Wyoming coal could become competitive with Australian coal in the Pacific Rim market. To be competitive in Japan, however, Wyoming producers would have to deliver coal there at approximately the same price at which coal currently is delivered to southern Texas.

To achieve either of these market expansions, at least four actions to reduce the monopoly power the Union Pacific and Burlington Northern railroads must be considered. First, legal recourse may be available to stimulate rail competition. In fact, the Western Fuels Association has recently sued Burlington Northern for violation of anti-trust statutes. Secondly, the state could lobby for regulation replacing the Staggers Act of 1980, which essentially eliminated (subject to extreme bounds) government control of rail rates, on the grounds that previously regulated monopolists are simply now deregulated monopolists. Third, subsidies could be paid to rail lines to serve the Powder River Basin. Recently, Chicago Northwest Railroad, with the help of Union Pacific, has entered the Powder River Basin. The entry of more railroads like the Chicago Northwest might substantially increase competition. Fourth, implementation of a coal slurry pipeline which uses western water or an aquatrain, which would use liquified CO_2 as a transport medium, should reduce rail rates. However, either of these last two options would require subsidies by the state or the federal government, at least in their early stages of development. Further, substantial coal contracts would have to be signed between utilities and the pipelines before construction could commence. Finally, laws prohibiting the sale of Wyoming water or its inter-basin transfer would have to be modified. The importance of coal slurry pipelines in reducing rail rates has already been demonstrated. In fact, merely the threat of additional competition from a coal slurry pipeline has generated a 5 to 8 percent reduction in the rail rates which Arkansas Power and Light must pay for its coal. Arkansas Power and Light officials indicate that this has resulted in a savings of approximately $20 million over the next 20-year life horizon of its plants.

In short, a more aggressive marketing of Wyoming coal using any of the above mentioned methods could result in an expanded severance tax base which is stabilized to the extent that the competitive position of Wyoming coal improves.

5. Summary

The prolific economic bloom of the 1970s in Wyoming has faded with the 1980s. Only modest economic growth is forecast for the near-term. Coal production is likely to remain below contracted tonnage, relying on existing long-term contracts rather than new demand. Oil production should remain fairly constant for the next several years, before once again settling into a state of relative decline. Natural gas production will increase, despite little new exploratory drilling. Uranium production will continue to skid.

Agriculture will continue to be pressed by economic difficulties, while tourism should experience some modest growth.

State revenues also will probably experience little real growth. The combination of rising minerals prices and increasing tax rates that contributed to the huge growth in severance tax collections during the 1970s will probably not be repeated in the near-term. The impact of steady-state oil prices on general economic activity in Wyoming also militate against growth in sales revenues.

While state initiatives might result in some diversification of the economy, Wyoming seems destined to remain heavily reliant upon the economic forces that impinge upon the mining sector, forces over which the state exercises little influence.

REFERENCES

Atkinson, Scott E., Kerkvliet, Joe and Barclay, Paulette, 1983. Transportation Charges, Production Taxes, and Scrubber Legislation: Consequences for the Wyoming Coal Market. Office of Research and Graduate Studies, University of Wyoming, Laramie, Wyoming.

Gerking, Shelby and Merrifield, John, 1982. "The Wyoming Economy: Historical Trends and Projections." Southwestern Review of Management and Economics, 2(Fall, 1982), 37-55.

Jones, Richard W., 1984. "Winter Minerals Outlook." Wyoming Quarterly Update. Institute for Policy Research, University of Wyoming, Laramie, Wyo9ming.

Lichtblau, John H., 1983. "United States Energy--The Next Seven Years." Energy User News, December 19.

Miernyk, William H., Giarratani, Frank, and Socher, Charles F., 1978. Regional Impacts of Rising Energy Prices. Ballinger Publishing Company: Cambridge, Massachusetts.

U.S. Travel Data Center, 1982. "The Economic Impact of Travel on Wyoming Counties, 1981." Washington, DC.

Wyoming Crop and Livestock Reporting Service, 1983. Wyoming Agricultural Statitics. Cheyenne, Wyoming.

Wyoming Department of Administration and Fiscal Control, 1983. Wyoming Population and Employment Forecast Report. Cheyenne, Wyoming.

Wyoming Department of Economic Planning and Development, various years. Mineral Yearbook. Cheyenne, Wyoming.

Wyoming Legislative Service Office, 1983. Taxes on Wyoming's Minerals: History and Projections. Cheyenne, Wyoming.

Wyoming Department of Revenue and Taxation, 1983. Annual Report. Cheyenne, Wyoming.

Wyoming Department of Revenue and Taxation, Ad Valorem Tax Division, 1983. Annual Report. Cheyenne, Wyoming.

Wyoming Governor's Industrial Development Task Force Report, 1984. Governor's Office, Cheyenne, Wyoming.

IDAHO

A REVIEW OF IDAHO'S RECENT ECONOMIC PERFORMANCE AND A NEAR-TERM OUTLOOK, 1984-1987

BY

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Historical Review: The 1970's And The Recession

The 1970's brought unprecedented growth to the Idaho economy. A population growth of 32.4% (an annual rate of 2.8%) over the decade ranked Idaho seventh in the nation in percentage growth. Approximately 127,000 new jobs were created in the state, enabling an annual rate of growth in real personal income of 2.5%, compared to a national rate of 2.2%. Idaho seemed immune to national recessions and economic problems throughout most of the 1970's. For example: during the national recession of 1974-1975 when national employment growth came to a standstill, Idaho actually gained nearly 24,000 jobs.

The economic growth of the seventies peaked in 1979 when nearly 361,000 people were employed in Idaho industries. The 1980-1982 national recession ended the once optimistic growth that had been experienced. During this recession over 24,000 Idaho workers lost their jobs.

Today, Idaho is on the path to recovery, but the effects of the 1980-1982 recession will linger with the state and for many years to come. The Idaho Power economic model of the state of Idaho forecasts that total employment will not return to prerecession levels until 1985. Real per capita personal income is forecasted to follow a similar pattern. Many years of economic growth were lost in the recession years of 1980 thru 1982.

In an examination of reasons why the 1980-1982 recession impacted Idaho so severely, a study of the state's industry mix is necessary. Historically, the Idaho economy has been driven by demands for natural resources, i.e., metals, timber, and agricultural commodities. The national consumption of the metals and timber output took the form of consumer durables such as automobiles and homes. Agricultural demand, with the exception of potatoes, was predominantly determined in the world marketplace.

During times when consumers demanded bigger homes and second homes, and when interest rates were advantageous to home ownership, the Idaho lumber industry blossomed. Inflation also played an important role. When the rate of inflation was high, an investment in a home was prudent because it would gain value faster than most other investment opportunities that were available at the time. Furthermore, a high rate of inflation implied that, with a fixed interest rate mortgage, one could pay for the home with cheaper dollars as time went by. The last argument would also apply to credit purchases of other consumer durables such as automobiles, furniture, etc.

In addition, the 1973 oil embargo and the subsequent oil price increases over the period 1973 to 1980 caused a change in consumer tastes for transportation. Automobiles gained fuel efficiency and decreased in size at the expense of consumption of heavier metal components, reducing demand for zinc and lead; Idaho metals are used extensively in the automobile industry for steel plating and batteries. Furthermore, automobile emission standards prohibited the use of lead in gasoline for new cars, which caused a further lessening of demand for Idaho metals output.

World prices for food commodities have caused good times as well as bad for Idaho agriculture. The Russian Grain Sale in the early seventies was a boon to Idaho agriculture. The dumping of sugar by lesser-developed countries and the subsequent large decline in sugar prices in the late seventies caused a loss of jobs in Idaho with the closure of a large sugar refinery. The Russian Grain Embargo caused a loss of farm income and slowed export demands for Idaho agricultural commodities.

Metal prices are also determined in the world market. In the last twenty-years many of the underdeveloped third-world nations have developed their own natural resources, quite often resulting in a world surplus of basic commodities. This caused a cost-price squeeze to be imposed on Idaho metal industries, some of which were not blessed with the least cost production facilities or the richest of ore deposits.

When world market prices are considered, it must be realized that other nations may not operate their productive resources with the same objectives as in the U.S. For example, the U.S. Forest Service Policy of sustained yield harvesting of timber has behind it the premise that there will exist a fixed amount of national forest land and a sustained yield of forest output from those lands into the future. On the other hand, the Canadians harvest timber with the objective of providing a steady base of employment. The Canadian policy will cause periods of oversupply of wood products when demand slackens. During this time they would export more timber at lower prices to maintain their desired level of employment, often to the detriment of the U.S. and Idaho lumber industry. Other countries may operate their natural resource industries in a fashion similar to the Canadian example, but with different objectives.

Idaho's Natural Resource Base:

The 1980-1982 recession in Idaho saw the natural resource industries severely depressed. Table 1 and Figure 1 examine the primary natural resource industries of lumber, agriculture, and mining, as well as the tertiary natural resource industries (those which are located here because of the primary natural resource industries, e.g., paper, chemicals, metals, and food products) as a share of total state employment. It should be noted here that the primary and tertiary natural resource industries have declined as a share of total employment since 1970. If the same recessionary factors had occurred in 1970 as occurred in 1980, I think we can safely say that the impact would have been much greater. This decline of the natural resource industries as a share of total basic employment is forecasted to continue into the future.

The growth of secondary industries (the service sector industries) during the seventies and the addition of manufacturing firms in the areas of electrical and non-electrical machinery have historically caused the natural resource industries to be a smaller and smaller share of total employment.

What does the future hold for Idaho's industry mix? The forecast indicates that many of the natural resource industries, which have been the bulk of the basic industries of the state, will lose some of their importance. Agricultural expansion will be constrained by the availability

Table 1
A COMPARISON OF PRIMARY NATURAL RESOURCE INDUSTRY EMPLOYMENT TO TOTAL STATE EMPLOYMENT
(Thousands of Jobs)

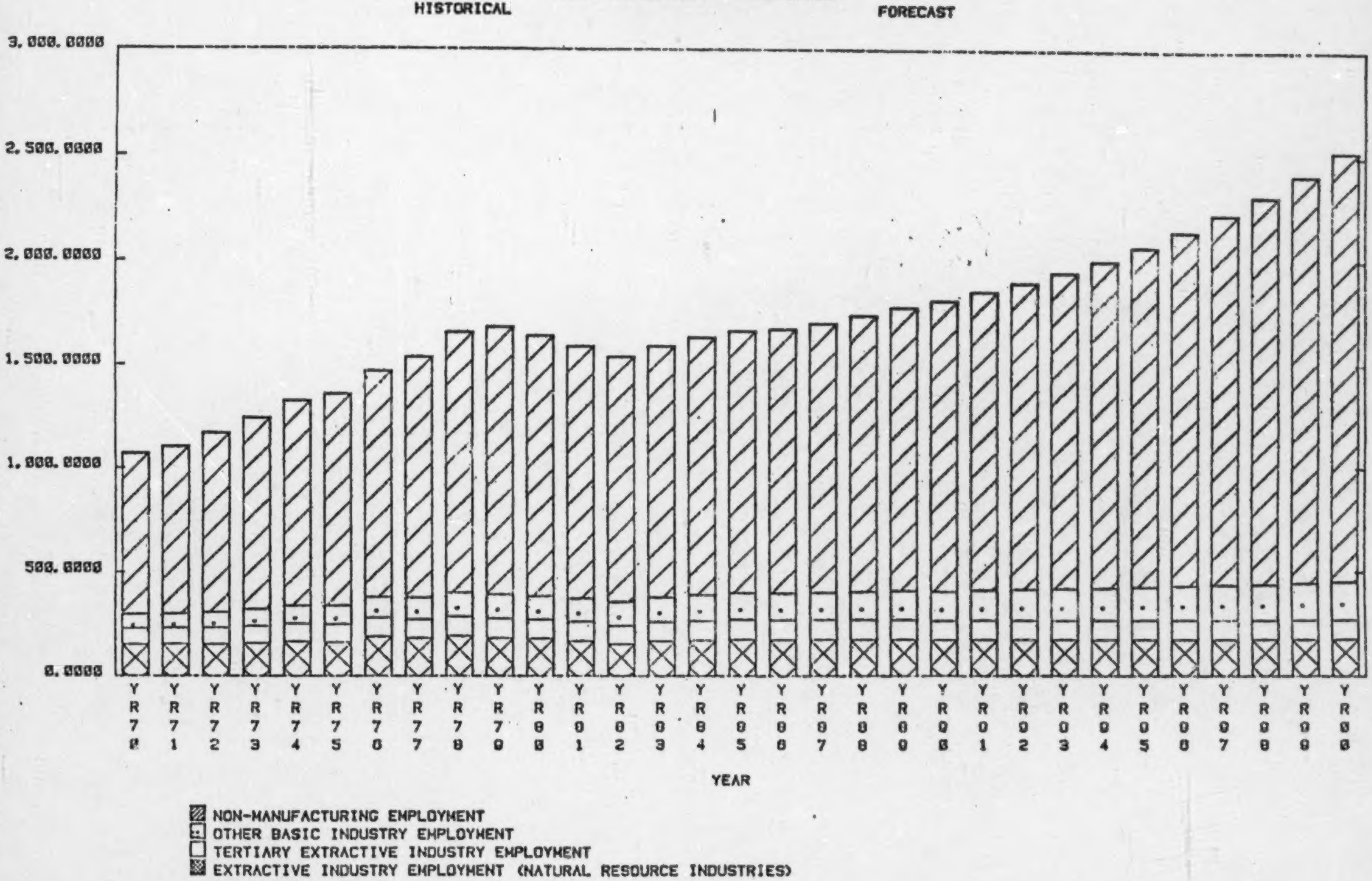
	Lumber	Agriculture	Mining	Total Natural Resource Employment	Total State Employment	Natural Resource Emp. as a percent of Total State Emp.
1970	15.11	20.03	3.29	38.43	234.51	16.4%
1975	15.64	21.94	3.65	41.23	294.89	14.0%
1980	15.38	25.63	4.70	45.71	351.60	13.0%
1985	18.83	23.45	2.50	44.78	363.18	12.3%
1990	18.64	23.19	2.64	44.47	391.33	11.4%
1995	18.43	22.94	2.80	44.17	440.48	10.0%
2000	18.69	22.74	3.24	44.67	526.06	8.5%
2005	19.10	22.51	3.95	45.56	646.77	7.0%

Table 2b
A COMPARISON OF TERTIARY NATURAL RESOURCE INDUSTRY EMPLOYMENT TO TOTAL STATE EMPLOYMENT
(Thousands of Jobs)

	Paper	Chemicals	Primary Metals	Food	Total Tertiary Resource Industry Employment	Total State Employment	Total Tertiary Emp. as a % of Total State Emp.
1970	1.02	1.44	1.14	15.11	18.71	234.51	8.0%
1975	1.13	2.32	1.50	15.98	20.93	294.89	7.1%
1980	1.42	2.29	1.48	17.18	22.37	351.60	6.4%
1985	1.55	2.05	0.52	19.06	23.18	363.18	6.4%
1990	1.49	1.87	0.51	18.93	22.80	391.33	5.8%
1995	1.46	1.73	0.53	19.21	22.93	440.48	5.2%
2000	1.44	1.59	0.55	19.62	23.20	526.06	4.4%
2005	1.44	1.51	0.64	20.11	23.70	646.77	3.7%

Figure1

IDAHO POWER COMPANY
1984 BASE CASE ECONOMIC FORECAST
IDAHO EMPLOYMENT -- THOUSANDS



of water and land, as well as a continuing cost-price squeeze, which has found many input prices rising faster than prices received by the farmer for agricultural output. The lumber industry is facing severe structural changes and, in the Northwest, seems to be losing price competitiveness to producers in the Southeast. The mining and primary metals industries may not ever fully recover to its previous high levels from current near-depression levels. It is forecast that these three traditional industries will have lost nearly 4,000 jobs by the end of the century from their 1979 prerecession levels.

Long-Term Future Growth:

Future long-term employment growth will come from the newer industries which have located here within the last two decades. The light manufacturing industries, non-electrical machinery, electronic equipment, transportation equipment, and the other manufacturing sectors will provide the bulk of future manufacturing employment opportunities. This is not to say that other, presently important, manufacturing industries will not grow. The food processing industry, for example, is forecasted to provide an additional 2,500 jobs by the year 2000. But this is forecasted to be a slow growing sector, with job opportunities being created at a rate of less than one-half of the anticipated growth rate in the state's labor force.

The secondary (service sector) industries are forecasted to create the largest amount of new jobs over the rest of the century, (135,000) with the bulk of these in the wholesale and retail trade, services, and finance, insurance, and real estate areas. The anticipated growth in the secondary industries is consistent with historical and forecasted national trends.

The forecast of state per capita personal income finds a growth rate of nearly 1.9%, compared to a national rate of growth of 1.7% over the 1980 to 2000 period. There are two basic reasons for this difference. Not only will the rate of total employment growth by greater than the national average, leading to a faster rate of income growth, but also Idaho's traditionally high fertility rates are forecasted to decline over the forecast period, leading to a slower rate of population growth. In addition, the historical absolute difference between Idaho per capita income and national per capita income will narrow over the forecast period, such that Idaho per capita income is forecasted to be nearly 89% of the national figure by the year 2000 compared to 85% of the nation in 1980.

Table 2 and Figures 2 thru 4, examine the basic and secondary industries as a share of total state employment. While the basic industry jobs will continue to grow, they will lose share over the forecast period.

The Next Four Years: 1984 To 1987

During the next few years, covering the period 1984-1987, it is expected that the Idaho economy will make significant gains in total employment, and real per capita personal income. Overall, it is expected that total employment will reach an average of 370,000 by 1987. This represents a gain of 33,000 workers over the levels seen in 1982. Yet, by 1987, the

Table 2

A COMPARISON OF SECONDARY INDUSTRY EMPLOYMENT TO TOTAL STATE EMPLOYMENT

(Thousands of Employees)

	Contract Construction	Trans., Comm., & Utilities	Finance. Ins., & Real Estate	Wholesale & Retail Trade	Services	Local Government	Total Secondary Employment	Total State Employment	Secondary As a % of Total State
1970	10.90	14.04	10.79	50.88	33.30	41.01	160.92	234.51	68.6%
1975	16.18	16.33	14.43	67.73	44.54	51.37	210.58	294.89	71.4%
1980	17.17	19.29	23.50	80.46	57.76	57.73	255.91	351.60	72.6%
1985	21.62	20.54	24.51	84.82	52.82	58.73	263.04	363.18	72.4%
1990	22.60	20.78	27.93	92.42	61.28	64.59	289.60	391.33	74.0%
1995	22.67	22.51	35.79	104.03	77.14	71.50	333.64	440.48	75.7%
2000	23.15	26.71	52.29	126.02	105.59	79.22	412.98	526.06	78.5%
2005	24.04	33.06	79.87	156.62	150.19	87.80	531.58	646.77	82.2%

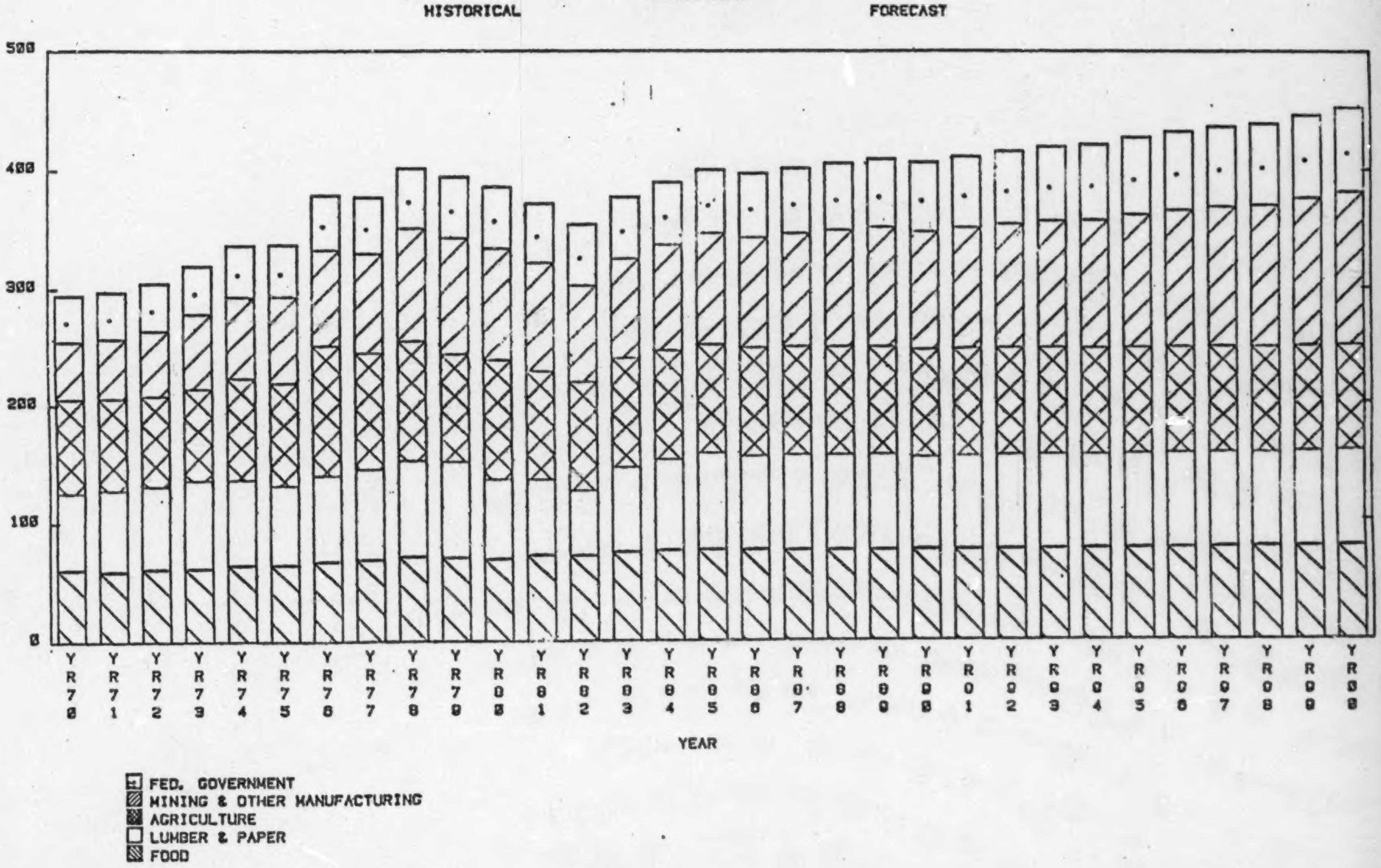
Table 3b

A COMPARISON OF BASIC INDUSTRY EMPLOYMENT TO TOTAL STATE EMPLOYMENT

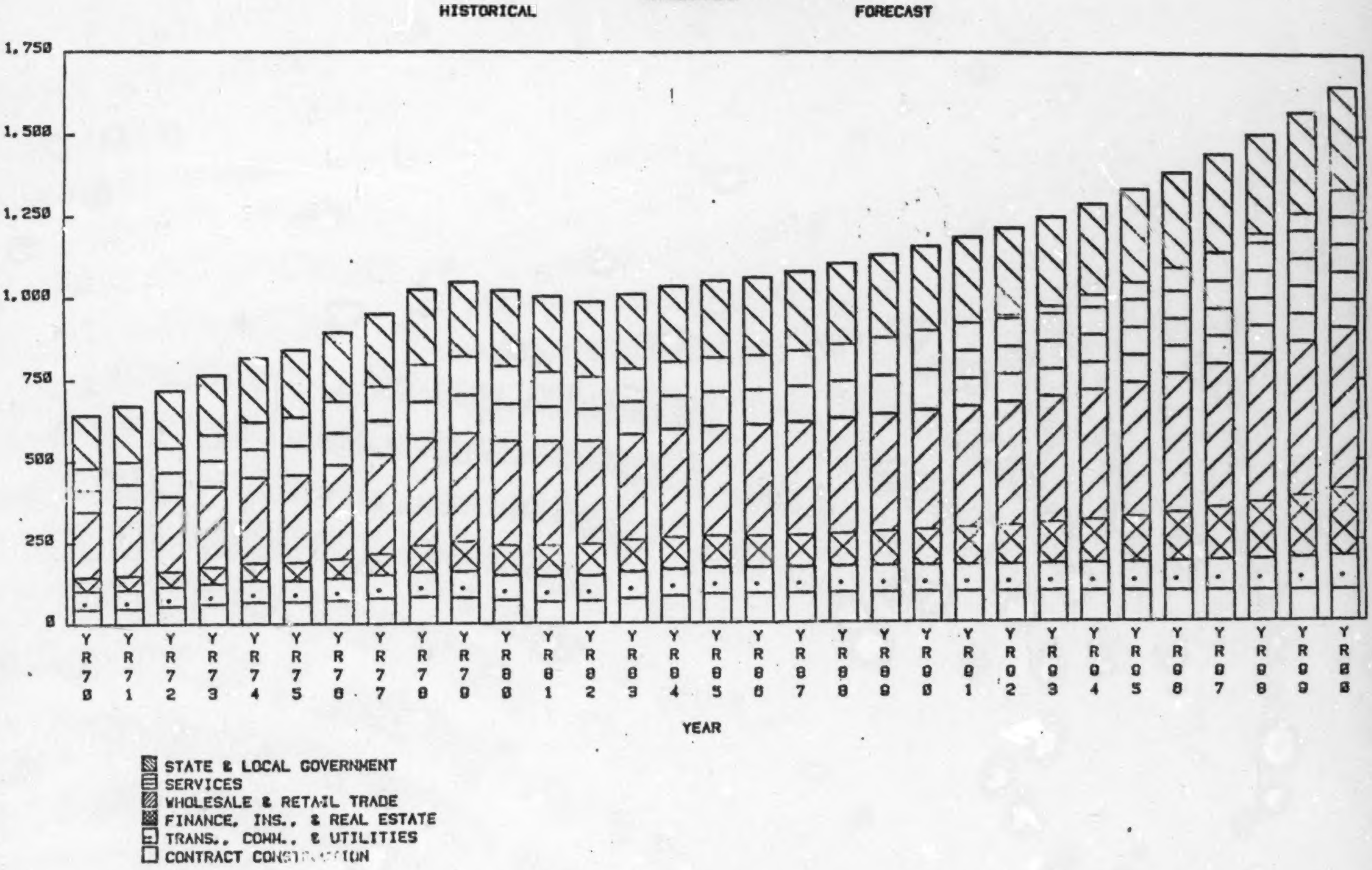
(Thousands of Employees)

	Manufacturing	Agriculture	Mining	Federal Government	Total Basic Employment	Total State Employment	Basic As A Percent Of Total
1970	40.28	20.03	3.29	9.99	73.59	234.51	31.4%
1975	47.78	21.94	3.65	10.95	84.32	294.89	28.6%
1980	53.12	25.63	4.70	13.05	96.50	351.60	27.4%
1985	60.82	23.45	2.50	13.37	100.14	363.18	27.6%
1990	61.27	23.19	2.64	14.63	101.73	391.33	26.0%
1995	64.98	22.94	2.80	16.12	106.84	440.48	24.3%
2000	69.45	22.74	3.24	17.66	113.09	526.06	21.5%
2005	75.85	22.51	3.95	19.26	121.57	646.77	18.8%

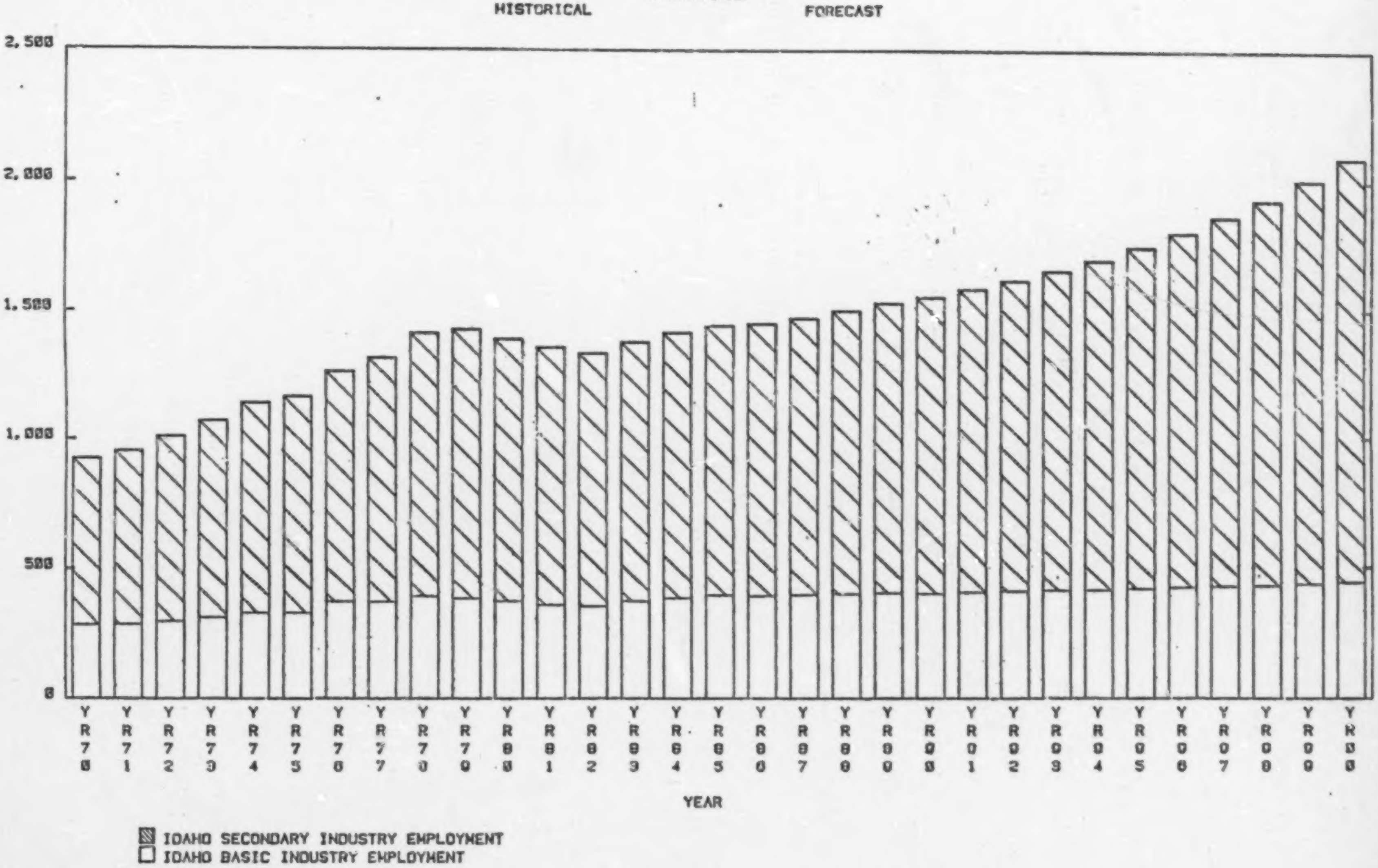
IDAHO POWER COMPANY
1984 BASE CASE ECONOMIC FORECAST
IDAHO BASIC INDUSTRY EMPLOYMENT
(THOUSANDS)



IDAHO POWER COMPANY
1984 BASE CASE ECONOMIC FORECAST
IDAHO SECONDARY INDUSTRY EMPLOYMENT
(THOUSANDS)



IDAHO POWER COMPANY
1984 BASE CASE ECONOMIC FORECAST
IDAHO BASIC & SECONDARY EMPLOYMENT
(THOUSANDS)



state will have just surpassed those prerecession levels of total employment experienced in 1979.

- Per capita personal income will grow at a rate of 2% per year over the period. On the other hand, it is anticipated that population gains will be modest, averaging an annual rate of change on 1.2%.

An industry by industry comparison reveals some interesting growth patterns. Table 3 examines annual average employment by industry. From this we can see that employment in agriculture, mining, transportation, communications and utilities, finance, insurance, and real estate, as well as the government sector, are forecasted to be rather slow growth industries during the period 1984 to 1987.

Those industries most notably hurt by the recession (manufacturing, construction, wholesale and retail trade, and to a lesser degree, the service sector) will make large gains in total employment as the recovery proceeds. Yet, these industries are not anticipated to reach their prerecession levels of employment until 1984 to 1985. Overall, the total employment outlook for the state finds a return to 1979 levels achieved in 1985.

An examination of the manufacturing subcategories as shown on Table 4 reveals that the traditional Idaho industries of lumber and wood products, food processing, and primary metals to be relatively stagnant after this year. The 1984 thru 1987 employment gains in these three sectors yields only 1,000 jobs. In addition, the paper industry, chemicals, and

Table 3
FORECASTED EMPLOYMENT
1982 - 1987
(thousands)

	HISTORICAL			FORECAST		
	1982	1983	1984	1985	1986	1987
Agriculture	23.3	23.4	23.5	23.5	23.4	23.4
% CHG	-0.2	0.4	0.4	0.0	-0.4	0.0
Mining	3.2	2.6	2.5	2.5	2.5	2.6
% CHG	-33.4	-18.7	-3.8	0.0	0.0	4.0
Manufacturing	50.4	55.4	58.4	60.8	60.0	60.8
% CHG	-3.7	9.9	5.4	4.1	-1.3	1.3
Construction	16.3	18.3	20.1	21.6	21.8	22.0
% CHG	2.5	12.3	9.8	7.5	0.9	0.9
Transportation, Communications, & Utilities	19.6	20.4	20.7	20.5	20.3	20.3
% CHG	0.0	4.1	1.5	-1.0	-1.0	0.0
Finance, Insurance, & Real Estate	24.9	25.1	24.8	24.5	24.5	24.8
% CHG	2.2	0.8	-1.2	1.2	0.0	1.2
Wholesale & Retail Trade	79.4	81.3	83.3	84.8	86.0	87.5
% CHG	-1.3	2.4	2.5	1.8	1.4	1.7
Services	49.5	50.6	52.0	52.8	53.3	54.7
% CHG	-7.2	2.2	2.8	1.5	0.9	2.6
Government:						
Federal	13.0	13.1	13.2	13.4	13.5	13.8
% CHG	-3.4	0.7	0.7	1.5	0.7	2.2
State & Local	57.2	57.0	57.9	58.7	59.6	60.6
% CHG	-0.9	-0.4	1.6	1.4	1.5	1.7
TOTAL EMPLOYMENT	336.8	347.2	356.4	363.2	364.8	370.4
% CHG	-2.2	3.1	2.6	1.9	0.4	1.5

transportation equipment (primarily recreational vehicles in Idaho) show virtually no growth after the recovery phase.

On the other hand, the non-electrical machinery sector, as well as electrical and electronic equipment add 1,300 new jobs to the Idaho economy over the 1984 to 1987 period. While this looks to be a positive situation, and when many are confident that the "high-tech" sectors will be the engine of future economic growth, a degree of caution must be used when examining or predicting future growth in "high-tech".

The outlook for future national employment indicates that the "high-tech" sectors, non-electrical machinery (primarily SIC 357; office, computing, and accounting machines), electrical and electronic equipment, and instruments, will not be fast growing sectors. This is not to deny the "electronic revolution" which seems to be sweeping the world. Output and the use of these goods will continue to grow. But, due to gains in productivity (automation if you will), the gains in employment will be small, only adding three quarters of a million jobs out of a forecasted total national employment gain of nearly 20 million jobs. The "high-tech" industries are truly a small slice of the total employment pie.

Selected Idaho Industries In Detail:

Lumber and Wood Products: As nonresidential construction expands, lumber and wood products employment will continue to grow in 1984, but at a slower 8% rate. An increase in interest rates in 1985 and 1986 will push national housing starts down to the 1.60 million range, causing a decline in Idaho

Table 4
FORECASTED MANUFACTURING EMPLOYMENT
1982 - 1987
(thousands)

	HISTORICAL			FORECAST		
	1982	1983	1984	1985	1986	1987
Food	17.9	18.6	18.9	19.1	19.0	19.0
% CHG	-0.5	3.9	1.6	1.1	-0.5	0.0
Lumber	12.3	16.4	17.7	18.8	18.2	18.5
% CHG	-15.8	33.3	7.9	6.2	-3.2	1.6
Paper	1.4	1.5	1.5	1.6	1.5	1.5
% CHG	5.2	7.1	0.0	6.7	-6.3	0.0
Chemicals	2.0	2.0	2.0	2.0	2.0	2.0
% CHG	-2.4	0.0	0.0	0.0	0.0	0.0
Primary Metals	0.2	0.2	0.4	0.5	0.5	0.5
% CHG	-84.0	0.0	100.0	25.0	0.0	0.0
Non-Elect. Machinery	4.8	5.0	5.6	6.4	6.4	6.8
% CHG	-0.5	4.2	12.0	14.3	0.0	6.3
Electrical Equip.	1.6	1.6	1.7	1.8	1.7	1.7
% CHG	8.1	0.0	6.3	5.9	-5.6	0.0
Transportation Equip.	0.4	0.9	1.1	1.2	1.1	1.2
% CHG	-11.1	125.0	22.2	9.1	8.3	9.1
Other Manufacturing	8.6	9.1	9.4	9.5	9.4	9.5
% CHG	3.2	5.8	3.3	1.1	-1.1	1.1
TOTAL MANUFACTURING	50.4	55.4	58.4	60.8	60.0	60.8
% CHG	-3.7	9.9	5.4	4.1	-1.3	1.3

lumber and wood products employment. High real rates of interest, smaller homes, and a significant gain in output by Southeastern producers will hold Idaho employment levels in this sector below their historical peak level of 19,000.

Non-Electrical Machinery and Electronic Equipment: Although employment in most manufacturing sectors dropped in 1982, non-electrical machinery and electronic equipment manufacturing employment did not decline. This area of manufacturing employment grew by 10.1% in 1983. Idaho's employment growth in these industries outpaces the national throughout the forecast period: Idaho's employment grows 15.5%; national, 12.7%. The electronic manufacturing industry continues to grow in Idaho.

Food Processing: Following a gradual decline since 1978, Idaho's food processing began to grow again. A smaller U.S. potato harvest this year raises the price of fresh potatoes. Although increasing their costs somewhat, Idaho potato processors gain from the higher price of potatoes, because it makes their product more competitive. As consumers continue to spend more, demand for processed food products, which declined during the recession, again grows. Idaho employment in food processing grew relatively quickly - 3.9% - last year. The growth in employment slows to a more normal rate (averaging 0.5%) in the following years.

Service Sector Industries: The fastest-growing sectors of the Idaho economy continue to be service industries - services, trade, transportation, public utilities, communications, finance, insurance, and real estate. These industries suffered less than basic industries did during the recession, losing only 4% of employment as opposed to 18% losses in manufacturing and 11% losses in mining employment. Domestic employment exceeds its peak levels early in the forecast period, although several basic sectors never do reach their peak levels. The increasing importance of service and trade employment in Idaho reflects national trends, the maturation of the Idaho economy, and increases in personal income.

Construction: Construction employment in Idaho expands slowly in the next few years. The high real rate of interest and the lower level of in-migration into Idaho dampens construction activity in Idaho throughout the forecast period. Residential construction is the major source of new construction jobs in the early part of the recovery. Residential construction activity was generally strong in the first three quarters of 1983, nearly double its levels in the first three quarters of 1982. However, commercial and industrial construction has not grown in the first nine months of 1983. Very low levels of capacity utilization in many Idaho manufacturing sectors discourages the construction of new industrial plants in Idaho during the next few years.

In total, Idaho Power's forecast finds that Idaho employment gains will be slower during 1984 than those being experienced in 1983, adding 9,200 to the employed. Year 1985 over 1984 finds another 6,800 added to the rolls of the employed, and 1986 versus 1985 yields an anticipated addition of another 1,600 workers. By 1985, Idaho employment will have reached and surpassed 1979 levels.

MONTANA

MONTANA'S ECONOMY: PAST, PRESENT, AND FUTURE

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The Setting: Long-Run Economic Trends in Montana, the Mountain States, and the United States.

The primary purpose here is to examine the current economic conditions in Montana and to discuss the outlook for 1984. But, before we can talk intelligently about current and future events, we will first put things into perspective by analyzing the long-run trends in Montana and compare Montana's economic performance with that of the United States and the mountain states.

The trends in the economies of the United States, the mountain states, and Montana during the 1960s and 1970s may be evaluated by analyzing population, per capita income, nonfarm labor income, and total employment. These general indicators measure different parts of the economy and their trends may not be identical during specific time periods. Taken together, however, these four indicators provide a good overview of the performance of a state's economy, and enables us to compare trends in Montana to those in the mountain states and the United States. The data for the four general economic indicators are presented in table 1.

Table 1

Population, Nonfarm Income, Per Capita Income, and Total Employment
Montana, Mountain Region, and the United States
1960 to 1980

	1960	1970	1980	*Percent Change* *1960-1970*	*Percent Change* *1970-1980*
Population (000s of persons)					
Montana	679	697	788	*2.7*	*13.1*
Mountain region	6,916	8,349	11,396	*20.7*	*36.5*
United States	179,954	203,799	227,156	*13.3*	*11.5*
Nonfarm labor income (000s of 1972 $)					
Montana	$ 1,295	$ 1,696	$ 2,470	*31.0*	*45.6*
Mountain region	15,363	24,442	41,866	*59.1*	*71.3*
United States	436,324	672,523	873,957	*54.1*	*30.0*
Total employment (000s of jobs)					
Montana	NA	284	370	----	*30.3*
Mountain region	NA	3,468	5.366	----	*54.7*
United States	NA	87,000	106,420	----	*22.3*
Per capita income (1972 $)					
Montana	$ 2,812	$ 3,706	$ 4,671	*31.8*	*26.0*
Percent of United States	*91.0*	*86.9*	*88.0*		
Mountian region	2,893	3,904	5,048	*34.9*	*29.3*
Percent of United States	*93.6*	*91.5*	*95.1*		
United States	3,091	4,265	5,309	*38.0*	*24.5*

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C.

Notes: NA denotes not available. The mountain region includes Colorado, Idaho, Montana, Utah, Wyoming, Arizona, Nevada, and New Mexico.

Population

The trends in population are examined first because, underneath it all an economy consists of people. Montana's population increased from about 679 thousand in 1960 to roughly 697 thousand in 1970, and then to approximately 788 thousand in 1980, representing a 2.7 percent rise in the 1960s and a 13.1 percent growth in the 1970s. Montana lagged behind the mountain states in terms of population growth during the entire 1960 to 1980 period; but, population rose more rapidly in Montana than in the United States in the 1970s.

Nonfarm Labor Income

Since there are no gross national product (GNP) statistics or other measures of total production for Montana and most other states, nonfarm labor income is used as an indicator of overall economic activity. It consists of wages and salaries, proprietor income, and other labor income of all working persons, except those employed in agriculture, and is sometimes called nonfarm participation income. Farms and ranches have been excluded because of significant year-to-year fluctuations in agricultural income which may mask important trends elsewhere in the economy. Because of the short-run correlation between changes in total output and the changes in the amount of labor required to produce it, nonfarm labor income (a measure of labor input) may be used as a proxy for changes in total economic activity. In order to correct for inflation, nonfarm labor income has been converted to constant 1972 dollars.

Nonfarm labor income in Montana increased 31.0 percent between 1960 and 1970 and 45.6 percent from 1970 to 1980. The figure for the 1960s was less than the national average, while the figure for the 1970s exceeded the growth rate for the United States. During both decades, however, the growth rates for nonfarm labor income in Montana fell far short of the figures for the mountain states.

Total Employment

The number of jobs in Montana rose from about 284 thousand in 1970 to approximately 370 thousand in 1980, an increase of 30.3 percent. The corresponding figures for the mountain states and the United States are 54.7 percent and 22.3 percent respectively.

Per Capita Income

The final indicator of economic conditions is per capita income, total personal income divided by population. Per capita income is a measure of economic well-being. The major shortcoming of this approach is that it equates well-being with money income, and certainly persons living in the mountain states enjoy many benefits which cannot easily be converted into dollars and cents. Per capita income has also been converted to 1972 dollars.

Montana's per capita income, corrected for inflation, rose 66.1 percent from 1960 to 1980, from $2,812 (1972 dollars) to $4,671 (1972 dollars). Despite the impressive growth, the Montana figures were consistently 10 to 14 percent below the nationwide average and roughly 5 percent less than the figures for the mountain states.

Summary of Long-Run Trends

What do these numbers mean? First, they show that Montana represents only a small component of the national and regional economies; in terms of population, nonfarm labor income, and total employment, Montana accounts for about 5 percent of the totals for the mountain states and less than one-half of one percent of the totals for the United States.

Secondly, Montana's economy generally grew more rapidly during the 1970s than in the 1960s. Population and nonfarm labor income had greater growth rates between 1970 and 1980 than from 1960 to 1970.

Thirdly, even though Montana's economy performed better than the nation's economy during the 1970s, the state consistently lagged behind its counterparts elsewhere in the mountain states. For example, Montana's population rose 13.1 percent from 1970 to 1980; this exceeded the 11.5 percent experience nationwide, but was far less than the 36.5 percent for the mountain states. Similarly, nonfarm labor income, our proxy for the change in total economic activity, increased 45.6 percent in Montana during the 1970s; the corresponding figures for the mountain states was 71.3 percent and 30.0 percent for the United States.

MONTANA'S ECONOMIC BASE

This section identifies the causes of Montana's economic growth during the 1970s and describes the current structure of the state's economic base. Both are important factors for evaluating current and future economic trends in the state.

Methodology

The two sector, or economic base, approach is well-suited for analyzing Montana's economy. Using available information, the industries may be easily assigned to basic and derivative categories. Further, there is relatively little intermediate production of goods and interstate commuting of workers, two factors which may complicate the use of the two sector approach. The basic industries are measured using labor income rather than employment. Labor income takes account of interindustry differences in earnings per worker. The data for labor income in the basic industries, converted to 1972 dollars, is shown in table 2.

Causes of Economic Growth in the 1970s

Total labor income for Montana's basic industries decreased about 1 percent between 1970 and 1980. This decline can be attributed to agriculture; 1980 was a very poor year for farms and ranches, and agriculture income was far below its "normal" level.

Nonfarm basic industries posted healthy increases; total labor income for these industries increased from about $607.6 million (1972 dollars) in 1970 to approximately $769.1 million (1972 dollars) in 1980, a rise of 26.6 percent. Energy development was the largest single contributor to the growth of Montana's economic base during the 1970s. Coal mining and oil and gas exploration (classified in other mining) both experienced very rapid growth, leading to an overall increase for the mining industry of 92.9 percent. In addition, some of the sizeable growth in railroads, which rose 39.6 percent from 1970 to 1980, may also be attributed to energy developments; most of Montana's coal is purchased by midwestern utilities and shipped via unit trains.

Table 2

Labor Income in Basic Industries
Montana
1970 and 1980

(In Thousands of 1972 Dollars)

	1970	1980	Percent Change 1970-1980
TOTAL LABOR INCOME	$ 925,352	$ 918,921	-.7
Agriculture[a]	317,716	149,843	-52.8
Total nonfarm labor income	607,636	769,078	26.6
Mining	67,853	130,901	92.9
Coal	1,379	25,493	1748.7
Metal	41,606	26,065	-37.4
Other	24,867	79,343	219.1
Heavy construction	59,798	51,079	-14.6
Manufacturing	216,491	270,832	25.1
Wood products	78,919	111,585	41.4
Primary metals	44,064	42,923	-2.6
Other	93,508	116,324	24.4
Railroads	72,499	101,202	39.6
Hotels, motels	17,597	29,222	66.1
Federal government	173,398	185,842	7.2
Civilian	118,223	144,026	21.8
Military	55,175	41,816	-24.2

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C.

[a] Includes agricultural services, forestry, and fisheries.

Energy developments were not the whole story. Almost all of Montana's nonfarm basic industries experienced significant growth. The wood products industry, for example, rose an impressive 41.4 percent between 1970 and 1980. Hotels and motels -- representing a portion of the tourist industry -- increased 66.1 percent. Finally, the labor income of federal civilian workers, which includes land and resource management agencies, grew 21.8 percent.

In summary, energy development contributed to Montana's economic prosperity during the 1970s, but there was also significant growth in the other basic industries. Roughly 40 percent of the increase in total nonfarm labor income can be attributed to energy resources, while the remaining 60 percent was due to expansion in the other components of the economic base.

The Structure of Montana's Economic Base

The data for labor income presented in table 2 may also be used to describe the structure of Montana's economic base and identify the major export industries.

Agriculture is by far the largest single component of Montana's economic base. Agriculture in Montana consists primarily of wheat and livestock. For the most part, these activities are located in the eastern two-thirds of the state. During 1980, labor income derived from farms and ranches accounted for about 16 percent of the total for all basic industries. As noted earlier, however, this was a very poor year for agriculture. During "normal" years, agriculture typically accounts for roughly one-third of Montana's economic base.

Second place among Montana's basic industries is a tie between mining, wood products, and the federal civilian government. During 1980, each accounted for roughly 15 percent of total labor income in basic industries.

The mining industry consists of mineral fuels and metal mining. Most of the energy-related development in Montana represents exploration and extraction of mineral fuels (coal, oil, and natural gas); for the most part, these activities have been in the eastern and southeastern part of the state. Metal mining is primarily located in the mountains of western Montana. Until recently, copper has been the major metal mined, but significant amounts of lead, silver, and gold are also extracted. The sizable decline in metal mining from 1970 to 1980, as measured by labor income, was primarily in copper mining and was associated with The Anaconda Company closures in the Butte area.

The wood products industry is located in western Montana. In addition to logging and related timber harvesting activities, there are sawmills, plywood, particleboard, and pulp and paper plants. During the 1970s, most of the growth in Montana's wood products industry was in plywood production and the further processing of residues (e.g. pulp and paper), rather than in sawmills.

Land and resource management agencies, such as the U.S. Forest Service and the Bureau of Land Mangement, account for a large share of the federal civilian employees in Montana. Most of the growth in labor income for the category was caused by rising pay scales rather than increases in the number of federal employees.

Primary metals refining was once an important basic industry in Montana. But closures by The Anaconda Company of facilities in Anaconda and Great Falls, the latest occurring in 1980, has reduced the number of primary metal refining facilities in Montana to two; The Anaconda Aluminum refinery near Kalispell and the ASARCO refinery near Helena. The 1980 figures for primary metals refining significantly overstate the current importance of this industry in Montana.

The remaining basic industries include heavy construction, other manufacturing, railroads, and tourism.

Current Economic Conditons: How Bad Was The Recession in Montana?

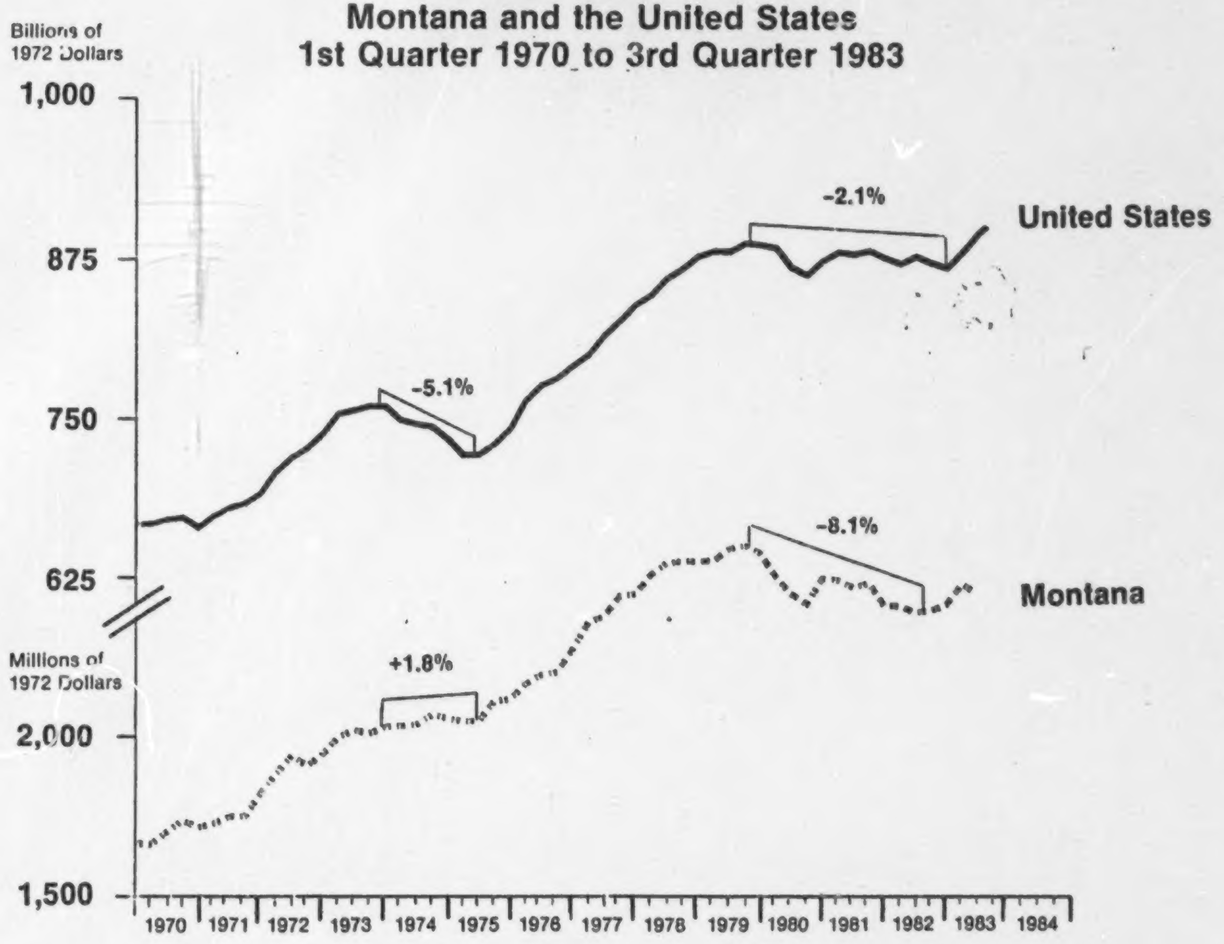
The general economic indicators (population, nonfarm labor income, and per capita income) shown in table 1 are not well-suited for analyzing short-run economic trends. They are annual averages and may not reflect the rapidly changing economic conditions associated with the business cycle. Further, the latest figures for these indicators may be one to two years old, and may not accurately reflect current conditions. In order to examine the recent recession in Montana, quarterly data for nonfarm labor income will be analyzed.

Quarterly data for nonfarm labor income, converted to 1972 dollars, for Montana and the United States is presented in figure 1. The data begins with the first quarter of 1970 and terminates with the third quarter of 1983, the latest figures available. Nonfarm labor income is a sensitive short-run economic indicator because it reflects payments to workers. It incorporates changes in both the number of hours worked and wage rates.

Duration and Severity of the Recent Recession

The recent recession is clearly shown in the data presented in figure 1. The peak in economic activity occurred late in 1979; the graph for both

Figure 1
Nonfarm Labor Income
Montana and the United States
1st Quarter 1970 to 3rd Quarter 1983



Montana and the United States turned sharply downward after the fourth quarter of 1979. The trough in the business cycle in Montana appears to have occurred in the second quarter of 1982. Interestingly, the upturn in economic activity in Montana, as measured by nonfarm labor income, actually predated the national recovery; U.S. nonfarm labor income reached a trough in the fourth quarter of 1982.

Many economists believe that the United States has technically experienced two recessions in recent years; one beginning in late 1979 and lasting for two or three quarters, and another starting in the middle of 1981 and continuing until late 1982. The data in figure 1 suggests that Montana experienced a similar trend; there was a slight upturn in nonfarm labor income late in 1980. But, this increase was relatively small, and nonfarm labor income did not return to its prerecession level. Therefore, it appears that the recent recession in Montana began in the fourth quarter of 1979 and continued until the second quarter of 1982 -- a period of ten quarters.[1] It was, therefore, the longest recession in the postwar period. The 1974-75 recession, in contrast, was about six quarters.

The recent recession in Montana was also severe. From the fourth quarter of 1979 to the second quarter of 1982, nonfarm labor income in Montana declined 8.1 percent. The corresponding figure for the United States' economy was a decline of 1.1 percent. In other words, the severity of the recent recession in Montana was much greater than in the United States.

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[1] The trough of the recent recession in Montana was dated as the second quarter of 1982, even though the second and third quarter 1983 estimates for nonfarm labor income show declines. The annual forecast for 1983 shows an increase over 1982.

The severity of the recent recession is not typical for Montana. Past economic downturns in Montana were usually less severe than in the United States. During the 1974-75 recession, for example, nonfarm labor income in Montana experienced only a deceleration in its growth rate, while it declined significantly in the nation. Montana's economy is usually less cyclic because of the importance of agriculture -- which has its own ups and downs, but they usually do not coincide with the national business cycle.

Unique Features of the Recent Recession

Montana's relatively poor economic performance during the recent recession was primarily due to three factors. They were:

(1) Poor profitability in agriculture.
(2) Extremely high interest rates.
(3) Permanent closures in Montana's basic industries.

Agricultural incomes. During "normal" periods, farms and ranches account for about one-third of Montana's economic base as measured by labor income, and cushion the impact of the national business cycle on the state's economy. Since the fourth quarter of 1979, net farm income (after accounting for inflation) has been consistently less, often much less, than one-half the corresponding figures for the 1974-75 recession. In other words, the recent recession, unfortunately, coincided with a period of poor profitability in agriculture.

High interest rates. The recent recession was characterized by extremely high nominal interest rates. They adversely affected Montana's wood products industry, one of the major components of the state's economic base.

Wood products employment declined by more than one-third between 1979 and 1982. This decrease would probably have been much greater had not the pulp and paper market remained relatively prosperous during most of the past few years. A number of sawmills in western Montana continued at least partial production in order to provide wood chips and other residues for the production of pulp and paper.

Permanent job losses. There has been a number of permanent closures and shutdowns in Montana's basic industries. Specifically, since 1979 there has been:

(1) The shutdown of a transcontinental railroad (The Milwaukee Road).
(2) The closure of large primary metals refineries in Anaconda and Great Falls.
(3) Cessation of all mining by The Anaconda Company in the Butte area.
(4) The loss of a large sawmill and plywood plant in Missoula.
(5) Reduced railroad employment due to reorganizations and improved efficiency.

Taken together, these events have resulted in the permanent loss of about 7,000 basic jobs in Montana. To put things into perspective, there was a total decline of about 13,000 jobs in nonfarm basic industries from 1979 to 1983. In other words, more than one-half of the basic jobs lost are the result of permanent shutdowns or closures, and will not return as the economy recovers from the recent recession.

Summary. The recent recession in Montana was unusually long and severe. This situation was caused by low agricultural incomes, high interest rates, and permanent job losses in basic industries. The permanent closures and shutdowns are particularly important because they represent a reduction in Montana's base that will not be regained as the economy recovers from the recent recession.

Current Economic Conditions and the Outlook for 1984

Montana's economy began to grow in the third quarter of 1983, about two quarters before the national upturn. Despite the headstart, Montana has lagged behind the rest of the nation. As shown in table 3, total personal income and nonfarm labor income in Montana are forecast to increase in 1983. But, in both cases, the growth in Montana is projected to be less than for the United States; inflation adjusted total personal income in 1983 will be up 0.8 percent in Montana as compared to 2.3 percent in the United States, while nonfarm labor income in constant dollars will rise 1.4 percent in Montana and 3.4 percent in the United States.

The good news for Montana's economy is in 1984. Both total personal income and nonfarm labor income are projected to increase significantly, and grow at about the same rates as in the United States. As shown in table 3, total personal income in 1984 is projected to rise 4.0 percent in both Montana and the United States, while nonfarm labor income will rise 4.5 percent in Montana and 4.6 percent nationwide.

Despite the relatively rosey aggregate projections for 1984, the recovery in Montana appears to be confined to a few areas and is not widespread throughout the economy. Among Montana's major basic industries, only the wood products is projected to experience significant growth. Agriculture and mining, the two other principal components of Montana's economic base, are not projected to grow significantly in 1984. A closer look at specific sectors follows:

Table 3

Projected Change in Total Personal Income and Nonfarm Labor Income, Montana and the United States, 1983 and 1984

	1983	1984
Total personal income (1972 dollars)		
Montana	+0.8%	+4.0%
United States	+2.3%	+4.0%
Nonfarm labor income (1972 dollars)		
Montana	+1.2%	+4.5%
United States	+3.4%	+4.6%

Source: Montana Economic Reporting and Forecasting System, Bureau of Business and Economic Research, University of Montana, 1983.

Agriculture

Montana's major agricultural products are grain (wheat and barley) and cattle sold to feedlots; neither has an encouraging price outlook for 1984. Much of Montana's grain is exported, primarily to southeast Asia. The strong dollar has increased the price of U.S. wheat to foreigners and has decreased our share of the market. The outlook for 1984 suggests no improvement in the dollar and little growth in grain exports. Beef prices may improve slightly in 1984, although the new federal dairy program could encourage the slaughter of dairy cattle and thereby hold down the price of beef.

Farm production costs appear to have stabilized. In Montana, net farm income in 1984, after adjustment for inflation, is projected to be up about five percent from 1983, but still far below the figures for 1979, 1980, and 1981.

Mining

The Montana mining industry has three components; coal mining, metal and nonmetal mining, and oil and gas exploration. The short-run outlook for all three is not encouraging.

Oil and natural gas exploration. The rapid increase in the world price of crude oil in the late 1970s ignited an exploration boom in eastern Montana. The high level of activity continued until late 1981. Since then, oil and natural gas exploration collapsed with the drop in petroleum prices. There appears to have been a slight upturn late in 1983, as oil prices stabilized and drilling costs decreased.

There is some exploration for oil and natural gas in the Overthrust Belt in the mountains of western Montana. The prospects are uncertain. If new reserves are discovered, however, they could be large and trigger another exploration boom.

Coal mining. After a period of rapid growth in the 1970s, Montana's coal industry has stabilized. The rising price of energy and the recent recession have slowed the growth in the demand for electricity, and had an immediate impact on coal production. There is currently excess capacity at Montana coal mines and no immediate prospects for increases in production, except to fuel two coal-fired electric generating plants scheduled to be completed in 1983 and 1984. Coal production is projected to remain at approximately 30 million tons per year in 1984.

Metallic and nonmetallic mining. The Anaconda Company ceased all mining operations in Butte in June 1983. They are unlikely to reopen these facilities in the near future, if ever. In the long-run, a number of new medium-sized (50 to 300 employees) underground mines producing gold, silver, and other metals are likely. But, none are scheduled to open in 1984. Employment and production of nonmetals (gypsum, limestone, talc, etc.) will increase slightly in 1984; they are tied to steel making, petroleum refining, chemical manufacturing, and other industries projected to increase as the nation's economy continues to recover from the recession.

The Wood Products Industry

The wood products industry is the only major basic industry in Montana to experience a significant recovery. There was an increase in wood products production early in 1983, and production has continued at high levels ever since.[2] In fact, sawmills in Montana were operating above their normal level of production and near the physical capacity of their equipment during most of 1983. Plywood and pulp/paper plants, the other major component of the wood products industry, also increased production somewhat. Most of the recovery in wood products, however, was in sawmills.

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[2] Forest Industry Information System, Bureau of Business and Economic Research, University of Montana, unpublished data, 1984.

The high levels of production in Montana's wood products industry is projected to continue in 1984, so long as interest rates do not rise significantly and cripple the U.S. construction industry. There will be further increases in labor income, even though wood products output cannot rise beyond capacity. Firms will hire more workers rather than having existing employees work overtime.

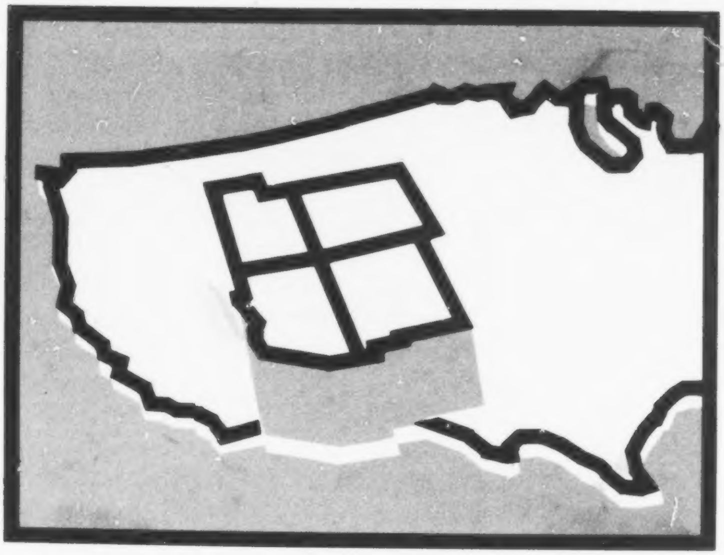
Other Basic Industries

The continued recovery of the U.S. economy will lead to improvements in Montana's other basic industries. There will be an increase in the traffic on the intercontinental railroads, which pass through Montana; more tourists will visit the state; the aluminum and lead/zinc refineries will continue high levels of production; finally, the small Montana specialty manufacturers who have established a national reputation will see their market grow.

Summary and Conclusions

Montana's economic performance in 1983 was much less robust than elsewhere in the United States. During 1984, aggregate economic activity in Montana, as measured by total personal income and nonfarm labor income, are projected to increase at about the same rates as for the United States. The economic recovery in Montana is confined to the wood products industry and several other small basic industries. Agriculture and mining are not projected to increase significantly in 1984.

In the long-run, Montana faces serious economic problems. Since 1979, there have been a number of permanent plant closures and reductions in basic industries. These activities will not return as the national economic recovery continues.



Mountain Region Economic Outlook Conference

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THIRD ANNUAL
MOUNTAIN REGION
ECONOMIC OUTLOOK CONFERENCE

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THE NATIONAL ECONOMY IN 1985: PERFORMANCE, PROBLEMS AND PROSPECTS

Presented at the Mountain Region Economic Outlook Conference

by David A. Wyss
Senior Vice President & Financial Economist
Data Resources, Inc.

****

Albuquerque, NM
March 12, 1985

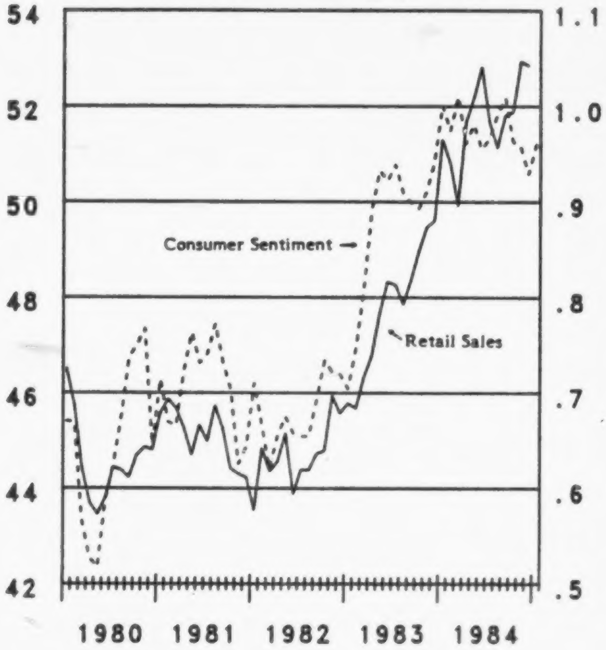
Data Resources Summary Table of the U.S. Economy - CONTROL022585

	1984		1985				1986	Years				
	III	IV	I	II	III	IV	I	1983	1984	1985	1986	1987
GNP and Its Components Billions of Dollars - SAAR												
Total Consumption	2361.4	2397.4	2444.8	2484.3	2525.4	2567.1	2607.4	2155.9	2342.0	2505.4	2670.9	2873.7
Nonres. Fixed Investment	435.7	445.9	449.8	457.7	466.1	475.4	485.6	352.9	425.3	462.2	501.5	555.3
Res. Fixed Investment	155.3	153.1	156.0	159.3	165.8	166.4	165.6	132.2	153.8	161.9	167.2	176.5
Inventory Investment	71.8	35.3	37.1	38.7	38.4	40.8	36.2	-13.5	57.9	38.8	31.3	37.0
Net Exports	-90.6	-49.2	-48.9	-57.7	-68.0	-79.8	-90.0	-8.3	-62.5	-63.6	-100.0	-115.6
Federal Purchases	302.0	316.3	323.9	329.7	335.1	342.9	347.6	269.8	295.6	332.9	356.4	385.3
State and Local Govt. Purchases	458.9	465.4	473.1	482.4	491.7	500.6	508.7	415.8	452.1	487.0	521.7	559.2
Gross National Product	3694.6	3764.2	3835.7	3894.4	3954.5	4013.6	4061.4	3304.8	3664.2	3924.5	4149.1	4471.5
Real GNP (1972 Dollars)	1645.2	1664.8	1678.5	1692.9	1706.8	1718.6	1725.1	1534.7	1639.9	1699.2	1738.4	1797.2
Prices and Wages - Annual Rates of Change												
Implicit Price Deflator	4.0	2.8	4.3	2.7	2.9	3.2	3.3	3.8	3.8	3.4	3.3	4.2
CPI - All Urban Consumers	3.6	3.9	3.2	3.5	3.4	3.6	3.8	3.2	4.2	3.5	3.8	4.6
Producer Price Index - Finished Goods	0.1	0.6	1.3	1.5	1.3	1.8	2.2	1.7	2.1	1.1	2.2	3.7
Compensation per Hour	3.6	3.3	5.9	4.0	4.2	4.8	5.7	4.8	4.2	4.3	5.0	5.8
Core Inflation	4.9	4.7	4.6	4.4	4.2	4.0	3.8	6.6	5.0	4.3	3.6	3.2
Production and Other Key Measures												
Industrial Production (1967=1.000)	1.656	1.651	1.670	1.683	1.696	1.706	1.712	1.476	1.634	1.689	1.729	1.821
Annual Rate of Change	6.4	-1.3	4.7	3.1	3.1	2.4	1.3	6.4	10.7	3.3	2.4	5.3
Housing Starts (Mil. Units)	1.663	1.586	1.734	1.814	1.809	1.769	1.745	1.704	1.764	1.781	1.738	1.715
Retail Unit Car Sales (Mil. Units)	10.3	10.2	10.9	10.8	10.9	11.0	10.9	9.2	10.4	10.9	10.9	11.0
National Unemployment Rate (%)	7.4	7.1	7.2	7.1	7.0	7.1	7.2	9.4	7.4	7.1	7.3	7.2
Federal Budget Surplus (NIA)	-180.6	-195.3	-185.9	-187.0	-189.0	-192.5	-192.2	-178.6	-175.2	-188.6	-197.9	-207.4
Money and Interest Rates												
Money Supply (M-2)	2293.8	2345.4	2423.6	2459.0	2488.9	2520.2	2551.6	2177.1	2345.4	2520.2	2690.5	2861.0
% Change, 4th-Qtr. to 4th-Qtr	7.4	7.7	9.4	9.0	8.5	7.5	5.3	11.8	7.7	7.5	6.8	6.3
New AA Corp. Utility Rate (%)	13.74	12.70	12.44	12.50	12.49	12.63	12.96	12.38	13.42	12.51	12.83	13.00
New High-Grade Corp. Bond Rate (%)	12.34	11.89	11.68	11.74	11.73	11.90	12.20	11.56	12.28	11.76	12.01	12.22
Federal Funds Rate (%)	11.39	9.27	8.50	8.69	8.97	9.63	10.24	9.09	10.22	8.95	10.10	11.20
Prime Rate (%)	12.99	11.80	10.54	10.50	10.56	11.27	11.93	10.79	12.04	10.72	11.98	13.05
Incomes - Billions of Dollars												
Personal Income	3047.2	3098.9	3148.6	3191.4	3238.8	3290.6	3336.7	2744.2	3012.8	3217.3	3416.6	3681.4
Real Disposable Income (%Ch)	3.9	3.9	3.8	2.6	2.8	3.0	2.3	3.5	6.7	3.6	2.5	3.2
Saving Rate (%)	6.3	6.3	5.8	5.5	5.3	5.2	5.1	5.0	6.1	5.5	5.0	5.2
Profits Before Tax	224.8	235.8	234.4	238.5	240.7	239.2	236.3	203.2	237.5	238.2	235.1	263.7
Profits After Tax	141.7	147.5	147.6	150.7	151.6	150.6	146.9	127.4	147.5	150.1	146.2	159.8
Company Profits	130.5	136.1	135.5	137.9	140.0	141.6	142.1	107.8	134.0	138.8	144.6	158.2
Four-Qtr. Percent Change	15.5	12.0	1.0	2.1	7.3	4.1	4.9	15.6	24.2	3.6	4.2	9.4
Composition of Real GNP - Annual Rates of Change												
Gross National Product	1.6	4.9	3.3	3.5	3.3	2.8	1.5	3.7	6.9	3.6	2.3	3.4
Final Sales	-1.0	8.5	3.7	3.3	3.4	2.6	2.0	3.2	5.0	4.2	2.5	3.3
Total Consumption	0.7	3.6	5.4	4.0	3.8	3.5	2.8	4.8	5.3	4.0	3.0	3.2
Nonres. Fixed Investment	13.7	6.3	2.9	5.9	6.1	6.2	6.0	2.5	19.6	7.0	5.7	6.3
Equipment	18.6	1.9	4.1	6.0	7.0	7.7	7.6	7.3	21.3	7.3	7.1	7.2
Nonres. Construction	2.0	18.8	-0.4	5.5	3.6	2.2	1.8	-7.8	15.7	6.3	2.2	3.7
Res. Fixed Investment	-4.5	-5.2	5.5	6.0	13.9	-1.6	-5.6	41.7	12.2	2.5	-0.4	0.6
Exports	7.7	2.2	5.5	3.6	3.5	4.3	4.5	-5.6	4.9	4.1	5.1	7.4
Imports	55.4	-31.9	12.8	12.4	12.0	12.0	10.4	7.6	26.5	6.3	10.0	6.4
Federal Government	6.0	15.6	2.1	4.5	3.7	2.0	2.1	-0.6	5.4	7.9	2.5	3.0
State and Local Governments	5.0	0.2	1.7	2.7	2.8	2.1	1.1	0.0	2.2	2.3	1.7	1.3

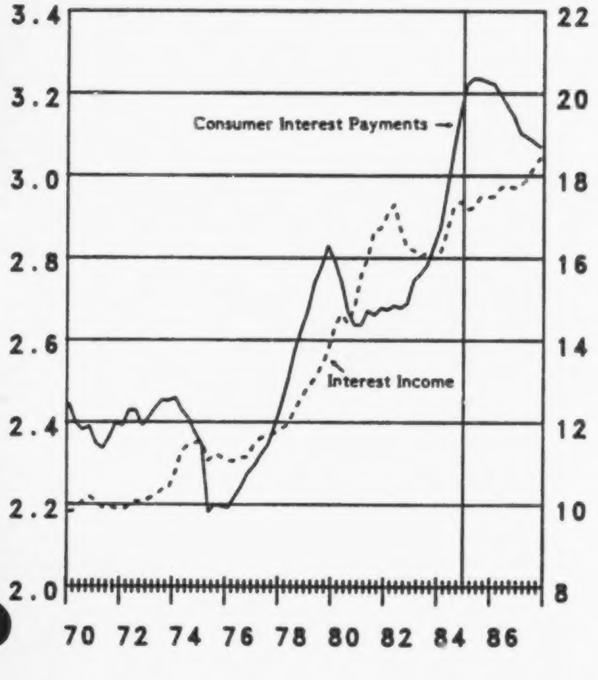
Recent Evidence

	%Change vs. Prior Month Oct.	Nov.	Dec.	Jan.	%Change 12 Months
Employment and Income					
Payroll Employment	0.4	0.4	0.2	0.4	3.9
Average Weekly Hours	-0.8	0.3	0.3	-0.3	-0.6
Nonfarm Income	0.4	0.7	0.4	0.6	8.3
Housing Starts (Millions)	1.56	1.60	1.60	1.83	1.93
Initial Unemp. Claims (Thousands)	406.2	400.8	393.8	394.4	368.5
Spending					
Real Nonauto Retail Sales	-1.3	1.6	0.1	-0.1	3.1
Real Retail Auto Sales	6.1	2.3	-1.4	3.7	4.8
Real Consumer Spending	-0.5	0.8	0.9	0.3	3.3
Consumer Sentiment	-4.6	-0.6	-2.9	3.3	-4.1
Industrial Production					
All Industry	-0.4	0.4	0.5	0.4	5.1
Manufacturing	-0.2	0.3	0.8	0.2	5.6
Durables	0.0	0.3	1.0	0.4	7.5
Nondurables	-0.5	0.3	0.4	0.1	3.2
Inflation					
Consumer Price Index	0.3	0.2	0.3	0.2	3.5
Producer Price Index	0.0	0.3	0.2	0.0	1.1
Excl. Food & Energy	-0.5	0.3	0.2	0.7	2.6
Average Hourly Earnings	-0.2	0.4	0.6	-0.2	2.7

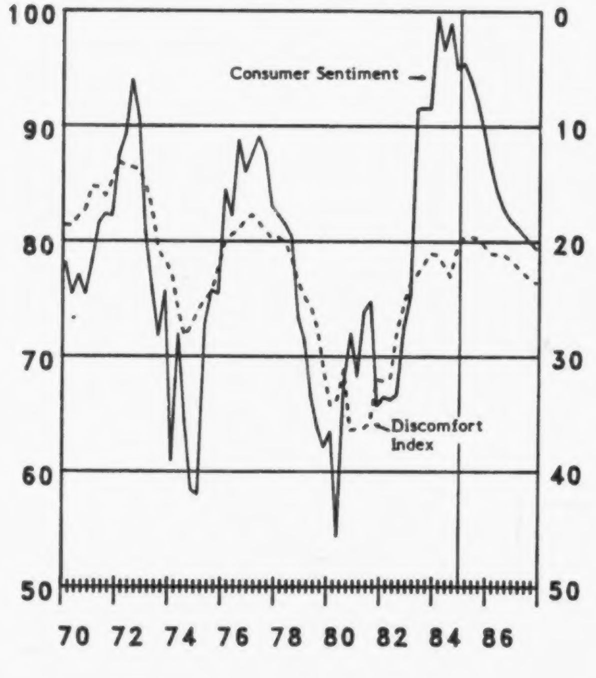
Real Retail Sales (Billions of dollars, left scale) versus Consumer Sentiment (Index, 1966:1=1.00, right scale)



Consumer Interest Payments and Interest Income As a Share of Personal Income

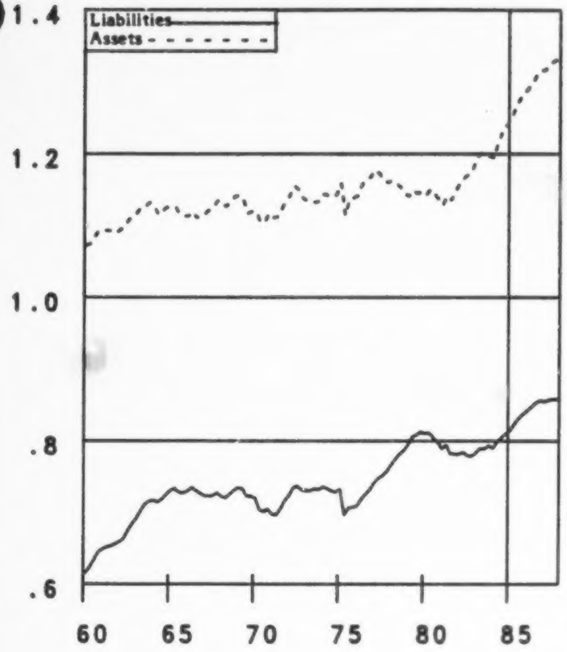


Comparison of Consumer Sentiment Index (Left scale) and Discomfort Index (Right scale) (1980:1=1.00



Household Finances

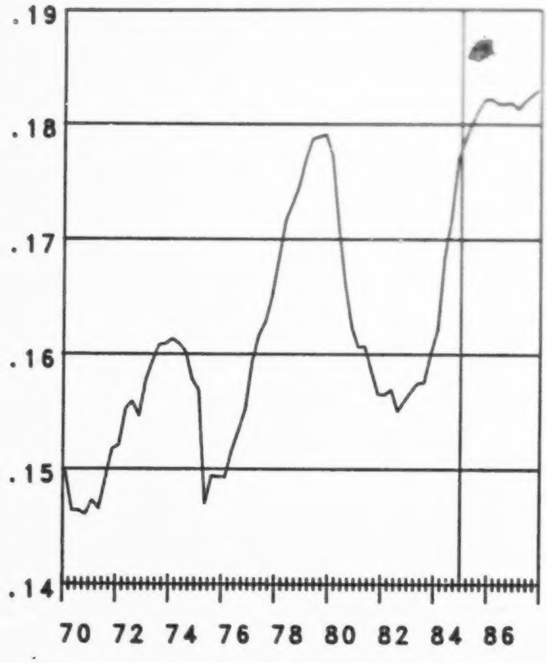
The Household Balance Sheet
Financial Assets and Liabilities
as Share of Disposable Income



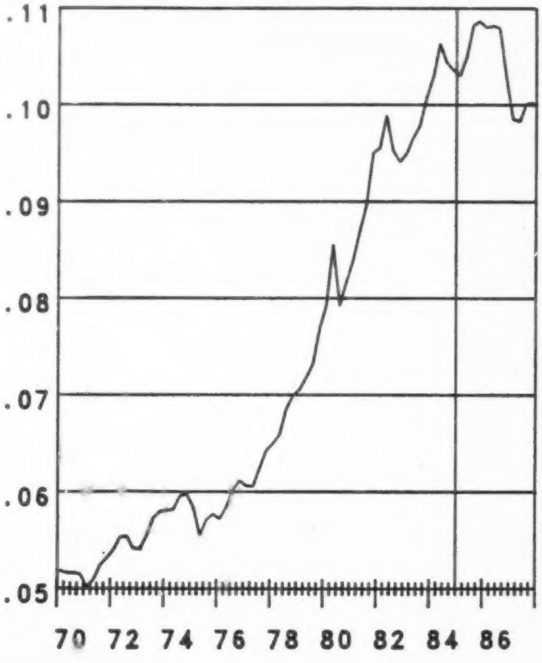
Recent Evidence: Spending

	Sep	Oct	Nov	Dec	Jan	1 Year
CONSUMPTION						
Nominal--Percent Change						
Total Consumption	1.4	-0.3	0.9	0.8	0.6	6.2
Durables	1.6	-0.1	2.0	2.8	-0.5	4.5
Nondurables	2.1	-1.0	0.2	0.7	0.0	2.3
Services	0.9	0.3	1.0	0.2	1.3	9.5
Real--Percent Change						
Total Consumption	1.2	-0.5	0.8	0.9	0.2	3.3
Durables	1.7	0.3	1.9	3.0	-0.7	4.7
Nondurables	2.0	-1.7	0.5	1.0	0.0	1.7
Services	0.3	0.1	0.6	0.2	0.8	4.1
RETAIL TRADE						
Nominal--Percent Change						
Total Sales	1.5	0.5	1.5	-0.5	0.7	3.8
Excluding Autos	1.8	-0.9	1.4	-0.2	-0.1	3.0
Durables	0.7	3.7	1.9	-0.7	2.5	7.4
Nondurables	2.0	-1.2	1.3	-0.3	-0.2	1.9
HOUSING STARTS (Millions)						
Housing Starts	1.669	1.564	1.600	1.595	1.833	1.933
Housing Permits	1.481	1.436	1.613	1.627	1.664	1.871
DURABLE GOODS ORDERS						
Total ($bil.)	98.7	96.1	104.0	102.1	106.0	99.4
% Change	-3.3	-2.6	8.3	-1.9	3.8	6.6
Nondefense Cap Gds	27.8	25.4	27.1	26.6	23.5	25.1
% Change	5.0	-8.8	6.9	-2.1	-11.5	-6.3
Defense Cap Gds	6.6	4.9	10.3	8.7	9.8	6.6
% Change	-13.2	-25.4	110.4	-16.1	12.9	48.4

Consumer Installment Credit Outstanding
as a Share of Disposable Income

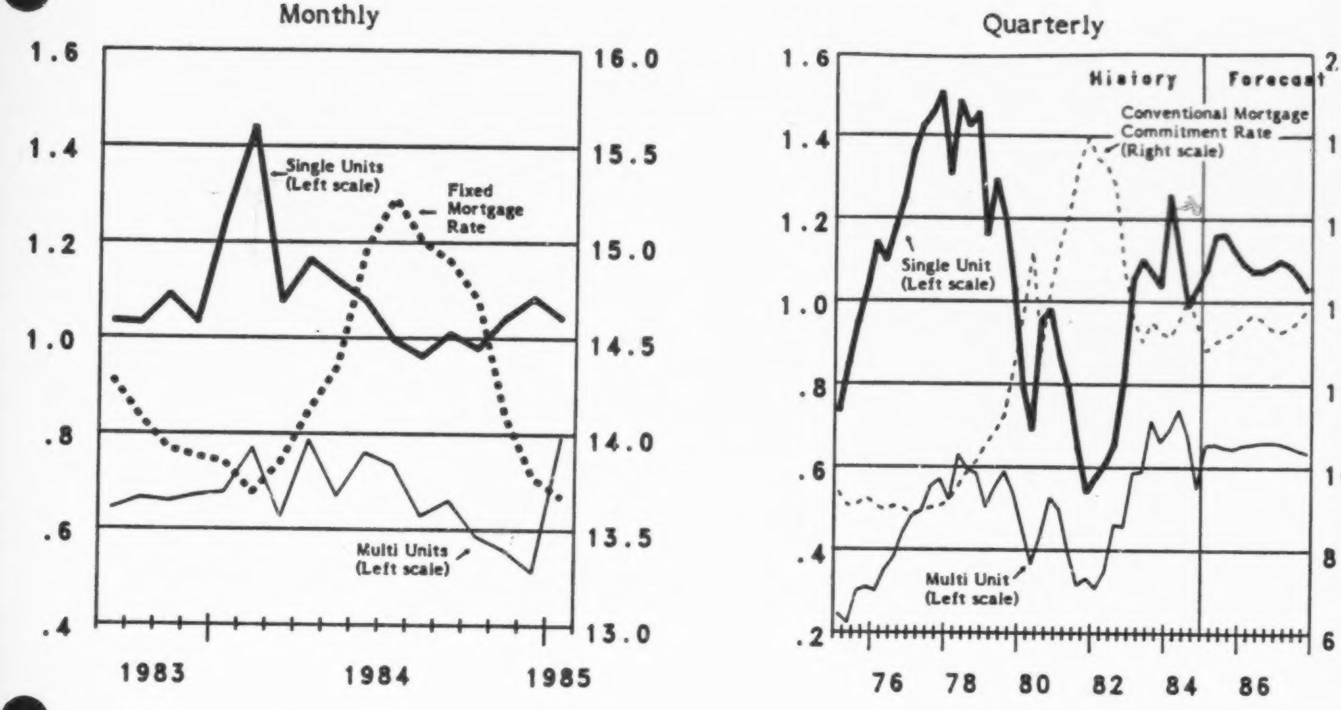


Household Interest Payments
as a Share of Disposable Income



Housing

Housing Starts and the Mortgage Rate Cycle



Recent Evidence

	Oct 1984	Nov 1984	Dec 1984	Jan 1985
Housing Starts (Millions)..................	1.56	1.60	1.60	1.83
GOOD NEWS				
New Single Family Home Sales (Millions)..	0.65	0.59	0.61	
Fixed Mortgage Rate (HUD Series, Percent)	13.59	13.20	13.05	
Permits (Millions)........................	1.44	1.61	1.63	1.66
Favorable Home Buying Attitudes (Index)..	52	54	54	61
Existing Home Sales (Millions)...........	2.65	2.82	2.85	

Outlook

	84:3	84:4	85:1	85:2	1983	1984	1985	1986	1987
Housing Starts (Million Units)									
Single Unit	0.99	1.04	1.08	1.16	1.07	1.10	1.13	1.08	1.07
Multi-Unit	0.67	0.55	0.65	0.66	0.64	0.66	0.65	0.66	0.65
Total	1.66	1.59	1.73	1.81	1.70	1.76	1.78	1.74	1.72
Real Residential Construction ($Billion)	57.7	56.9	57.7	58.6	51.6	57.9	59.3	58.9	59.2
%Change	-4.8	-5.8	6.0	6.0	43.5	12.2	2.4	-0.6	0.5
Conventional Mortgage Commitment Rate	14.1	13.4	12.8	13.0	13.3	13.6	13.1	13.5	13.5
Treasury Bill Rate	10.3	8.8	8.1	8.3	8.6	9.5	8.4	9.1	9.8
Spread	3.8	4.6	4.7	4.7	4.7	4.0	4.6	4.5	3.7

Business Investment

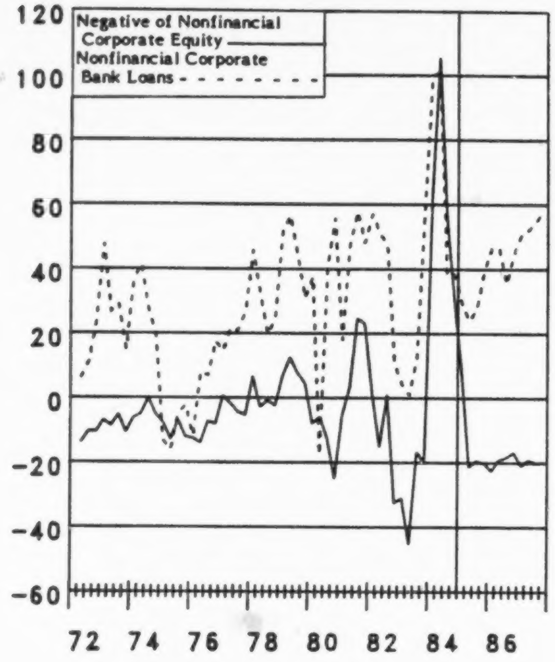
Nonfinancial Corporations:

	1983	1984	1985	1986	1987
Flows - Billions of Dollars - SAAR					
Expenditures					
Plant and Equipment	244.3	308.7	338.4	368.6	405.3
Inventories	-3.1	44.9	29.7	28.0	33.6
Residential Construction	7.2	5.3	5.1	4.4	4.8
Total	248.4	358.8	373.1	401.1	443.7
Annual Rate of Change	12.0	44.4	4.0	7.5	10.6
Internal Funds					
Retained Earnings	18.6	35.4	32.4	21.9	26.6
Depreciation	215.2	229.1	255.5	285.7	305.1
Foreign Branch Profits	11.2	9.6	10.7	11.8	12.5
Inventory Valuation Adjustment	-11.2	-6.0	-5.3	-15.5	-23.4
Total	232.5	268.3	293.0	303.4	320.6
Annual Rate of Change	5.4	15.4	9.2	3.6	5.6
Internal Funds/Expenditures (%)	94.5	74.8	78.5	75.7	72.3
External Funds					
Bank Loans	18.9	69.4	31.6	40.2	52.5
Bonds	25.2	38.2	45.5	46.7	54.7
Mortgages	2.9	0.4	8.1	7.3	11.0
New Stock Issues	28.3	-63.6	11.3	17.1	19.1
Total	75.3	44.4	96.6	111.5	137.3
Annual Rate of Change	-11.8	-41.0	117.5	15.4	23.2
Ratios - Percent					
Internal Funds/Total Funds Raised	75.7	86.1	75.4	73.1	70.1
Short-Term/Total Liabilities (Ratio of Outstanding)	49.4	51.9	51.5	51.7	52.0
bt Service/Cash Flow	52.5	50.5	47.0	47.2	48.1
Debt/Net Worth	101.7	107.8	105.7	104.8	106.7

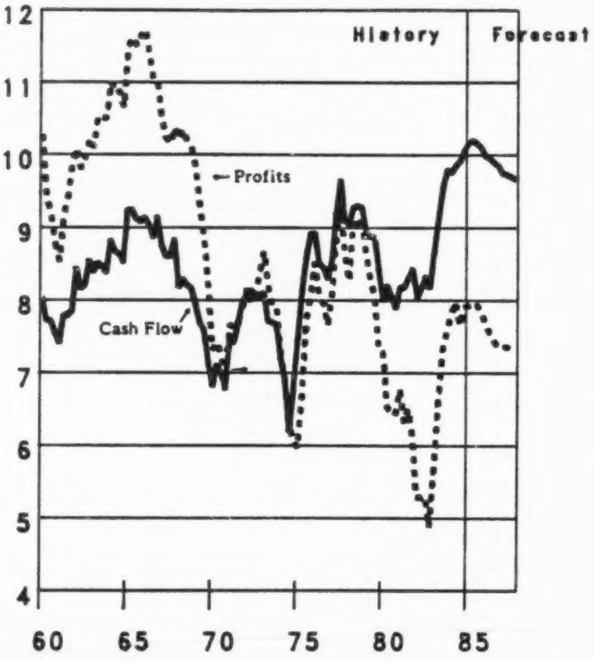
Investment Plans—1985 Forecasts (Percent change from 1984)

	Spending =	Volume +	Inflation
Commerce Department Survey Oct. - Nov.	8.4	6.8	1.5
McGraw Hill Survey Sept. - Oct.	9.8	4.3	5.3
DRI Control			
Nonfarm Plant & Equipment	9.0	6.9	2.0
Total Nonres. Fixed Invest.	8.7	7.0	1.6
Producers' Durable Equipment	9.1	7.3	1.7
Nonres. Structures	7.9	6.3	1.5

Bank Loans are Financing Mergers and Buybacks
Change in Equity vs. Change in Bank Loans
($ Billions)



Corporate Cash Flow* and Adjusted Before-Tax Profits as a Percent of GNP



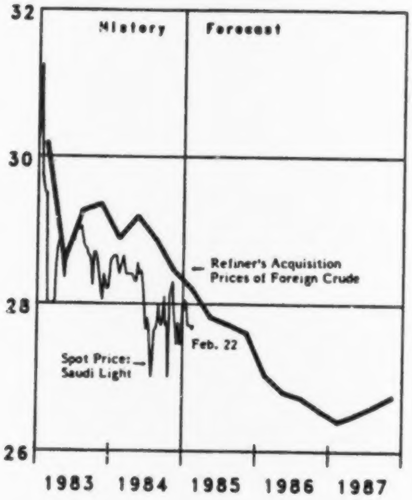
*Retained earnings plus capital consumption allowance plus inventory valuation allowance.

Inflation

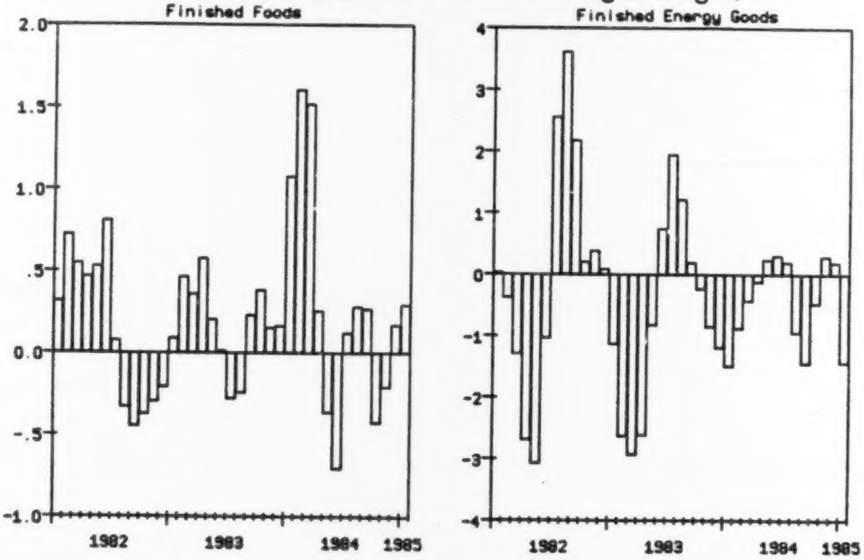
Inflation Forecast Summary

	84:2	84:3	84:4	85:1	85:2	1982	1983	1984	1985	1986	1987
Hourly Labor Costs											
Wages	3.2	2.7	2.8	3.3	3.6	7.0	4.6	3.3	3.3	4.4	5.2
Total Compensation	3.7	3.6	3.3	5.9	4.0	8.0	4.8	4.2	4.3	5.0	5.8
Productivity	5.4	-1.1	1.5	1.6	1.6	0.2	3.4	2.7	1.5	1.5	1.9
Unit Labor Costs	-1.8	4.9	1.8	4.1	2.3	7.8	1.3	1.5	2.7	3.4	3.8
Price Indexes											
CPI	3.7	3.6	3.9	3.2	3.5	6.2	3.2	4.2	3.5	3.8	4.6
WPI--Farm	-11.0	-6.0	-4.4	-2.8	-2.1	-4.9	2.5	3.0	-4.1	-0.9	2.6
--Energy	4.5	-8.3	-2.2	-5.5	-1.9	-0.2	-4.1	-1.2	-2.9	-0.4	1.2
--Nonenergy Industrial	3.3	1.5	0.7	1.6	1.9	3.1	2.3	2.8	1.8	3.5	4.7
GNP Deflator	3.3	4.0	2.8	4.3	2.7	6.0	3.8	3.8	3.4	3.3	4.2

Crude Oil Prices
(Dollars per barrel, NSA)

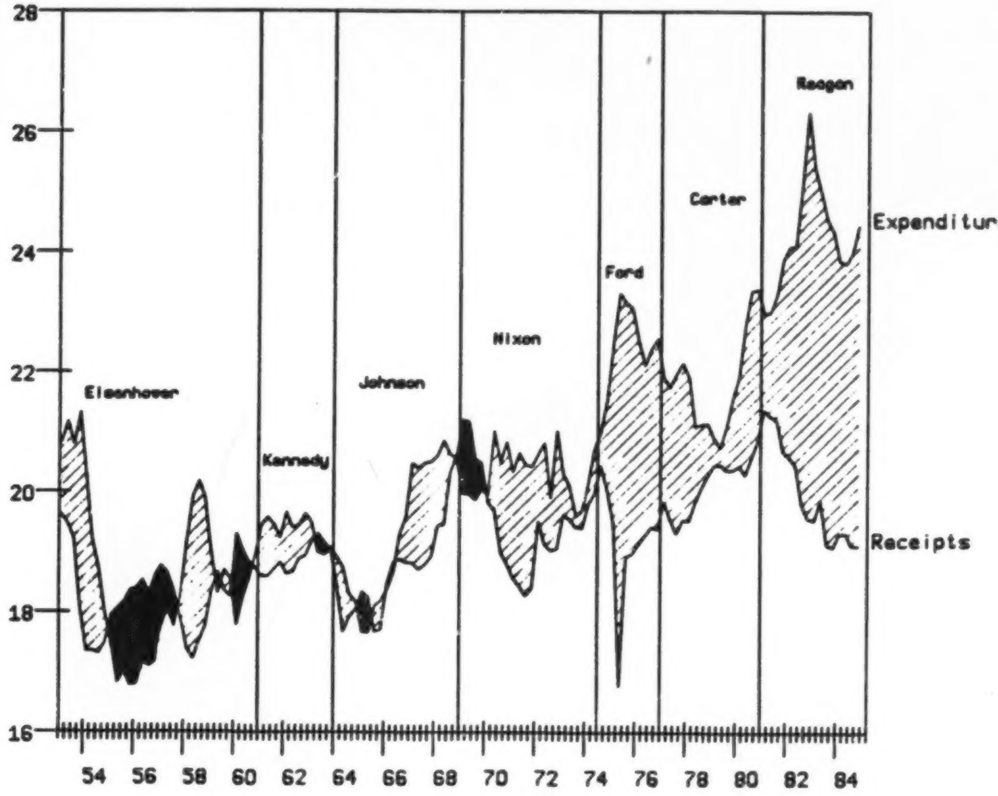


Volatile Food and Energy Prices are Keeping Producer Price Inflation at Bay
(Percent change, three-month moving averages)

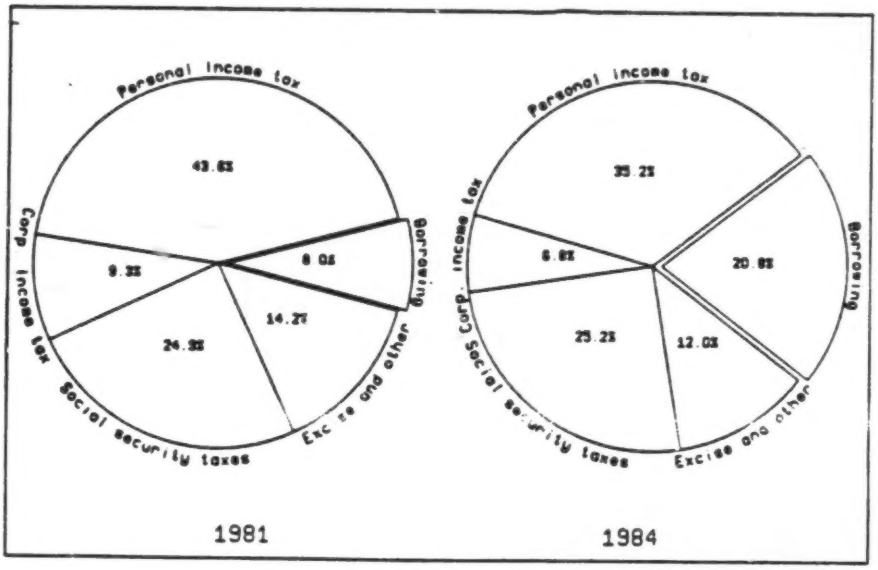


Financing the Debt

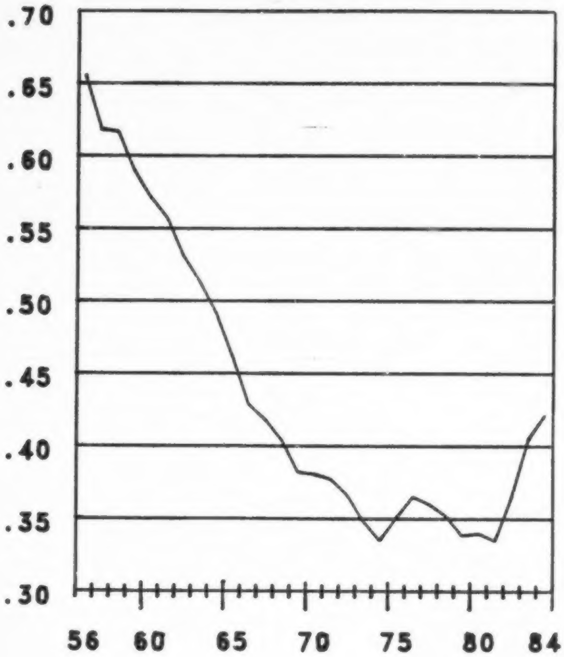
Government Receipts and Expenditures
(Percent of GNP)



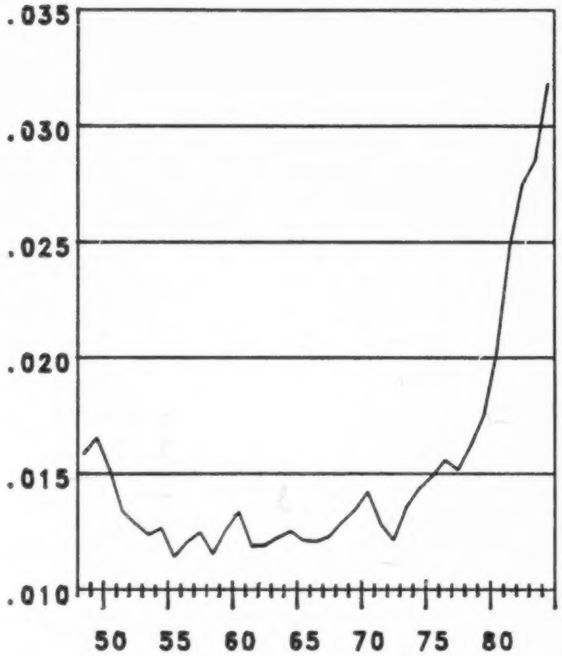
The Changing Distribution of
Federal Government Revenues



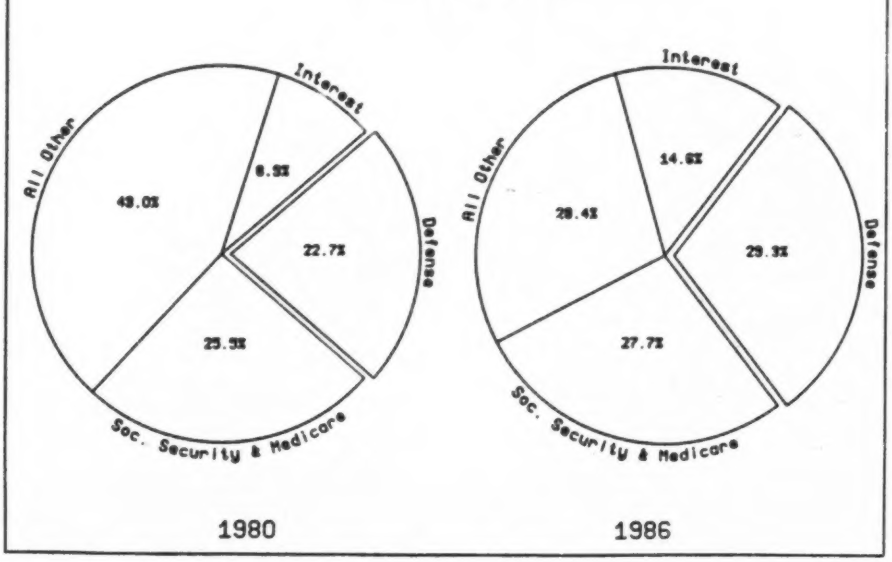
Federal Debt Oustanding
As a Share of GNP
(Percent)



Interest Expenditure
as a Share of GNP
(Percent)

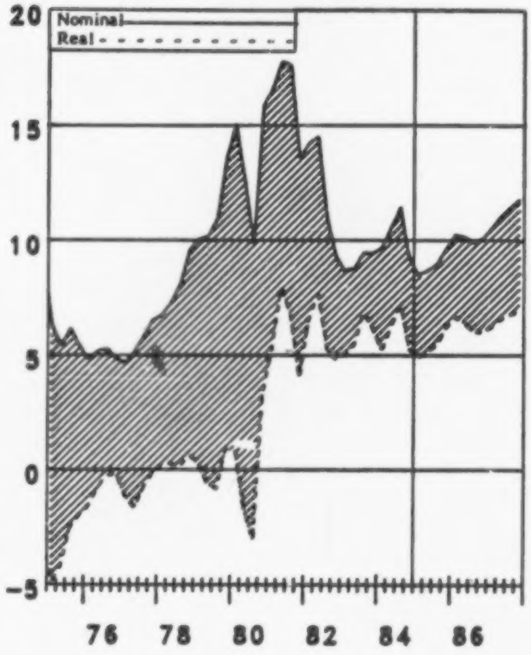


Federal Government Expenditures
Share of Budget

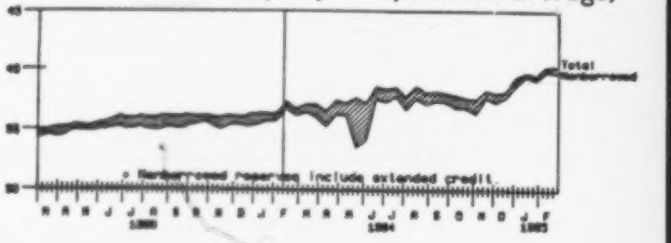


Short-Term Interest Rates

The Federal Funds Rate
Nominal and Real
(Percent)

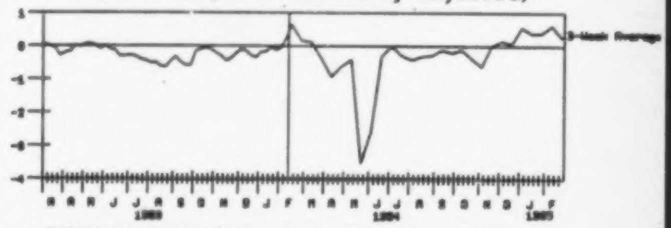


Total and Nonborrowed* Reserves
($ Billions, seasonally adjusted, 3-week average)



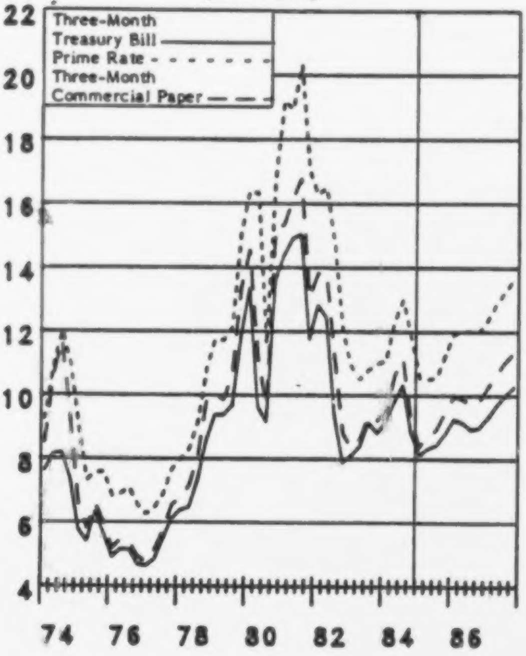
* Nonborrowed reserves include extended credit.

Free Reserves
($ Billions, not seasonally adjusted)

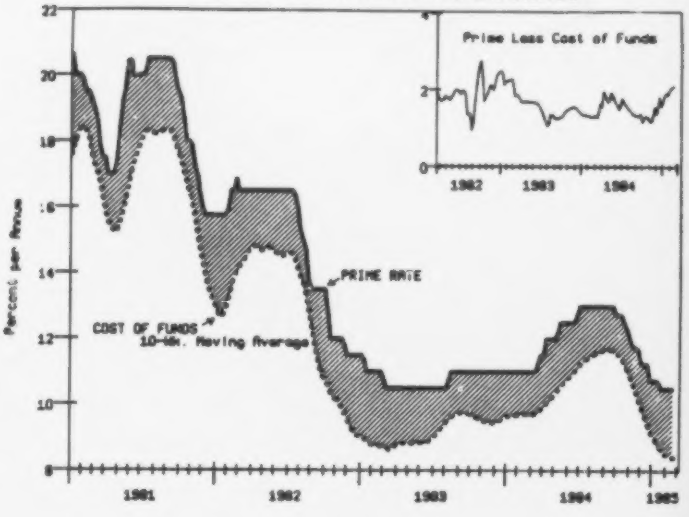


Vertical lines denote shift to contemporaneous reserve accounting.

Key Money Market Rates
(Percent)

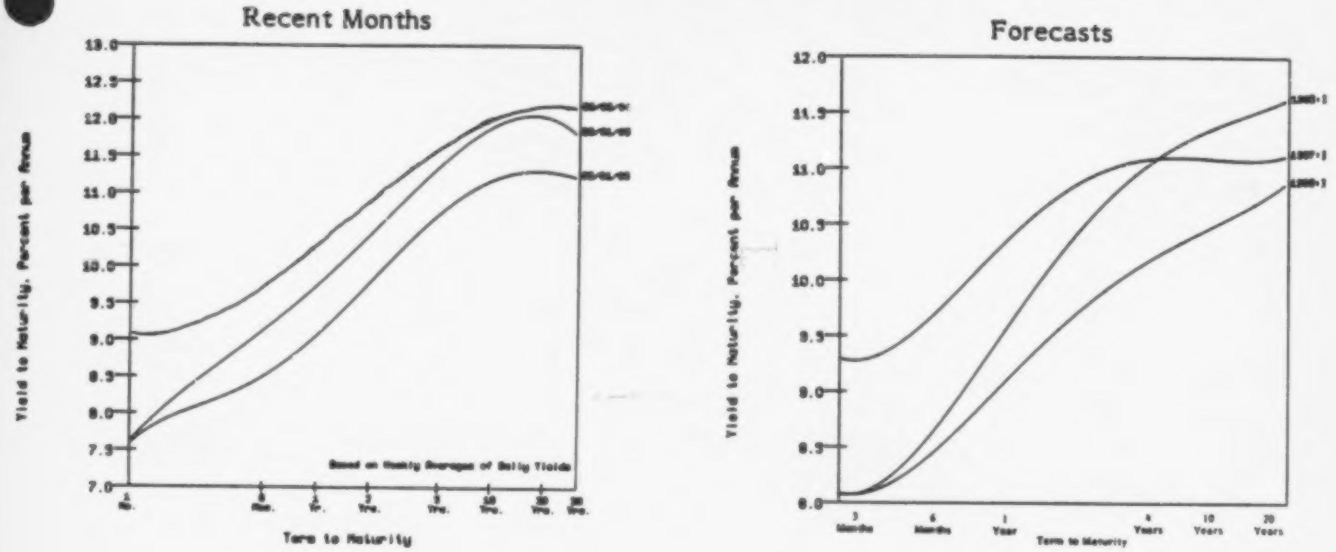


The Prime Rate Drops
as the Cost of Funds Declines

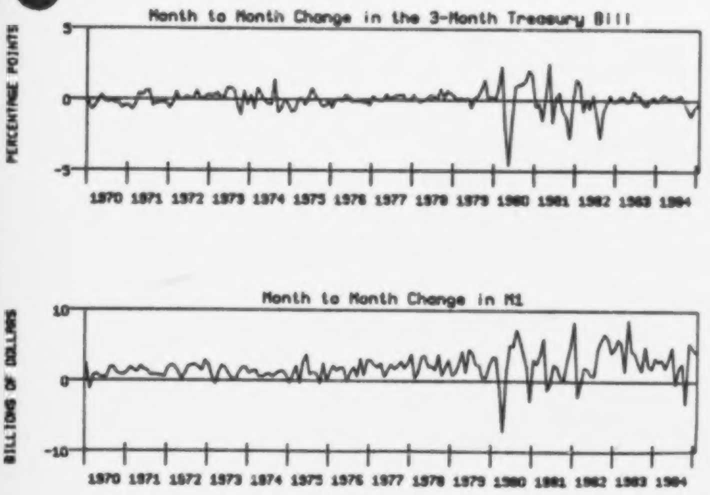


The Bond Market

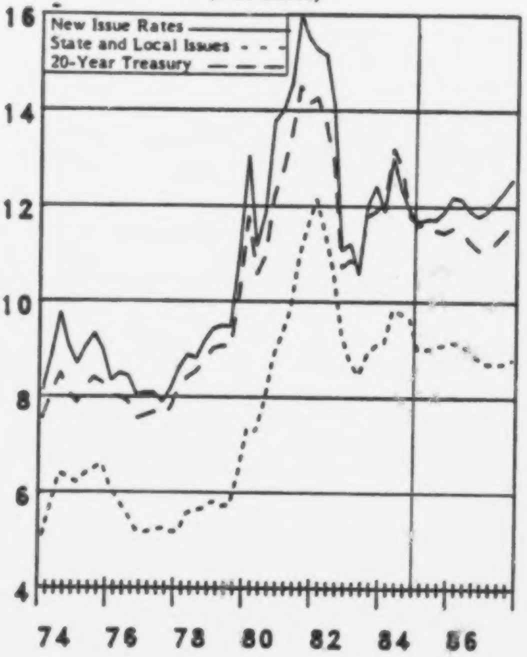
U.S. Government Securities Yield Curves



Volatility Has Been High



Key Bond Yields
(Percent)



Where is the Money Coming From?

Net Saving and Investment by Sector
(Percent of GNP)

	Net Personal Saving	Net Business Saving	State and Local Surplus or Deficit	Federal Surplus or Deficit	Net National Saving *	Capital Outflow (-) or Inflow (+) from Abroad	Net Domestic Investment **
1975	6.1	1.9	0.4	-4.5	3.8	-1.2	2.8
1976	4.1	2.8	1.5	-2.4	5.9	0.7	6.7
1977	4.1	2.8	1.5	-2.4	5.9	0.7	6.7
1978	4.1	2.9	1.4	-1.4	7.0	0.7	7.8
1979	4.0	2.3	1.3	-0.7	6.8	0.1	7.1
1980	4.2	1.2	1.2	-2.3	4.2	-0.2	4.0
1981	4.6	1.5	1.2	-2.1	5.2	-0.1	4.9
1982	4.1	1.2	1.0	-4.0	1.5	0.3	1.8
~~1983~~	~~3.4~~	2.4	1.5	-5.5	1.8	1.1	2.9
1984	3.6	2.9	1.7	-5.0	3.2	1.6	4.8
1985	3.9	2.8	1.5	-4.9	3.2	1.8	5.1
1986	3.7	2.6	1.3	-4.3	3.3	1.9	5.3
1950-54	4.7	2.3	-0.2	0.1	7.0	0.1	7.3
1955-59	4.8	2.6	-0.3	0.1	7.1	-0.4	7.0
1960-64	4.1	3.0	0.1	-0.3	6.9	-0.7	6.2
1965-69	4.9	3.6	0.0	-0.3	8.1	-0.3	7.8
1970-74	5.5	1.9	0.6	-1.2	6.8	-0.1	6.9
1975-79	4.6	2.4	1.1	-2.4	5.7	0.0	5.8
1980-84	4.0	1.8	1.3	-3.9	3.2	0.5	3.7
1985-89	3.7	2.5	1.4	-3.9	3.6	1.9	5.5
1990-94	3.4	1.8	1.2	-2.3	4.1	1.7	5.8

* Net national saving is the sum of columns 1 through 4.
** A statistical discrepancy is omitted from this table.

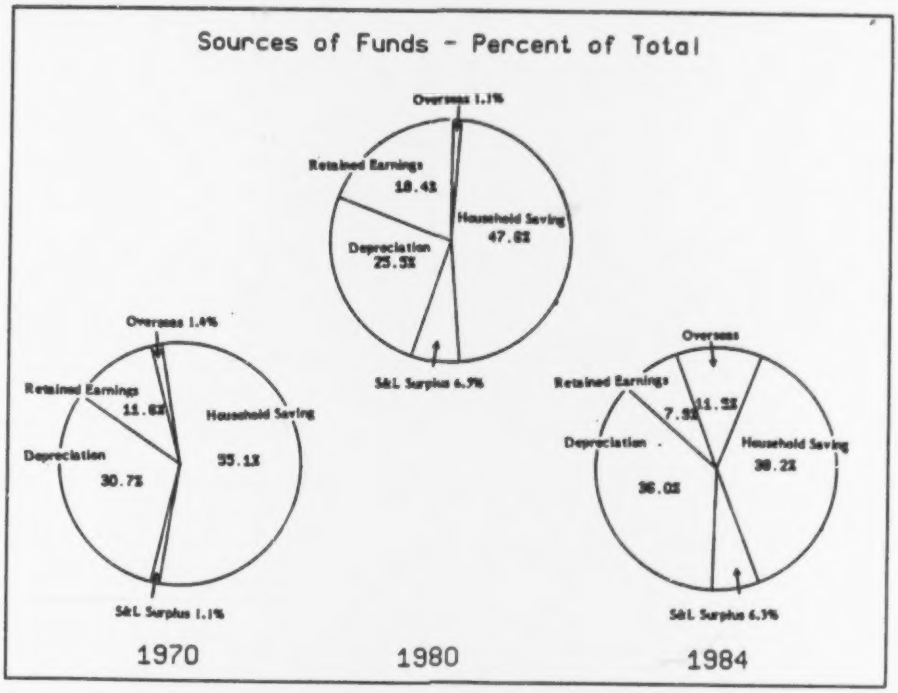
Monetary and Reserve Aggregates: Recent Growth Rates
(Percent, based on 4-week averages)

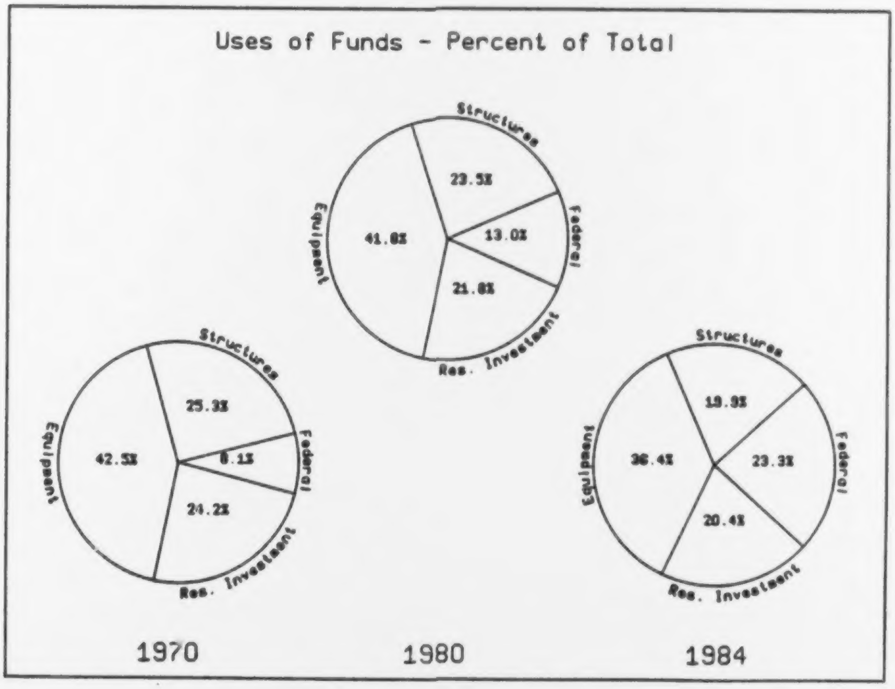
		% Chg.,Compound Annual Rate, Over				
Weekly	Week Ending	Last 4 Wks.	Last 8 Wks.	Last 13 Wks.	Last 26 Wks.	Last 52 Wks.
M1........................	Feb.18	13.6	18.7	14.9	7.6	6.3
Wkly. Reporting Banks						
Deposits (Excl. CDs)...	Feb.20	-19.5	13.0	18.4	15.2	9.6
Tot.Loans & Leases,Net.	Feb.20	-1.7	7.1	11.8	12.6	13.5
Monetary Base- Fed.Res...	Feb.27	12.0	11.9	10.9	6.0	6.6
Total Reserves...........	Feb.27	24.0	28.2	27.9	10.5	9.0
Nonborrowed Reserves.....	Feb.27	26.3	74.5	96.5	66.3	7.2

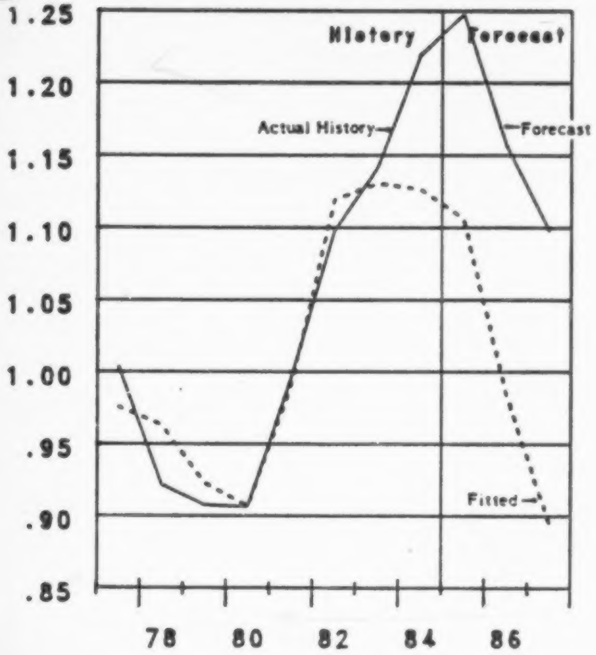
		Levels - Billions of Dollars				
		Last 4 Wks.	4 Wks. Ago	8 Wks. Ago	26 Wks. Ago	Year Ago
Borrowed Reserves........	Feb.27	1.272	2.961	4.924	8.066	0.564
Adj. Borrowed Reserves*..	Feb.27	0.406	0.457	0.654	0.637	0.456
Free Reserves............	Feb.27	0.430	0.305	-0.308	-0.298	0.399

		% Chg.,Compound Annual Rate, Over				
Monthly	Month	Last Month	Last 2 Mos.	Last 3 Mos.	Last 6 Mos.	Last Year
M1........................	Jan.	9.4	10.2	11.0	5.9	5.9
M2........................	Jan.	15.0	14.5	14.7	10.7	9.0
M3........................	Jan.	13.5	14.4	14.6	11.9	11.3
Private Dom.Nonfin.Credit	Dec.	15.0	15.3	14.4	13.4	13.7
Total Com'l.Bk.Deposits..	Jan.	14.1	16.3	15.9	8.9	7.6
Loans & Leases,Com'l.Bks.	Jan.	7.0	10.2	11.9	10.5	13.8

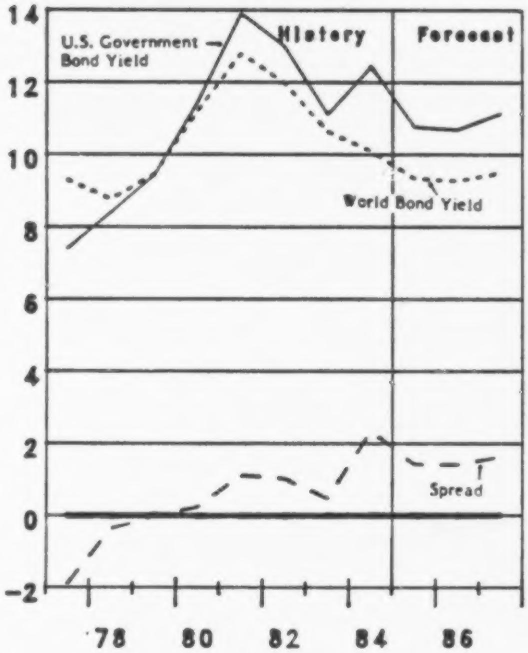
*Total borrowings less extended credit and seasonal borrowings.
N.B. Weekly data based on 4-week moving averages


Sources of Funds - Percent of Total
Overseas 1.4%
Retained Earnings
11.6%
Household Saving
55.1%
Depreciation
30.7%
S&L Surplus 1.1%
1970
Overseas 1.1%
Retained Earnings
18.4%
Household Saving
47.8%
Depreciation
25.3%
S&L Surplus 6.9%
1980
Overseas
Retained Earnings
7.9%
11.5%
Depreciation
36.0%
Household Saving
38.2%
S&L Surplus 6.3%
1984

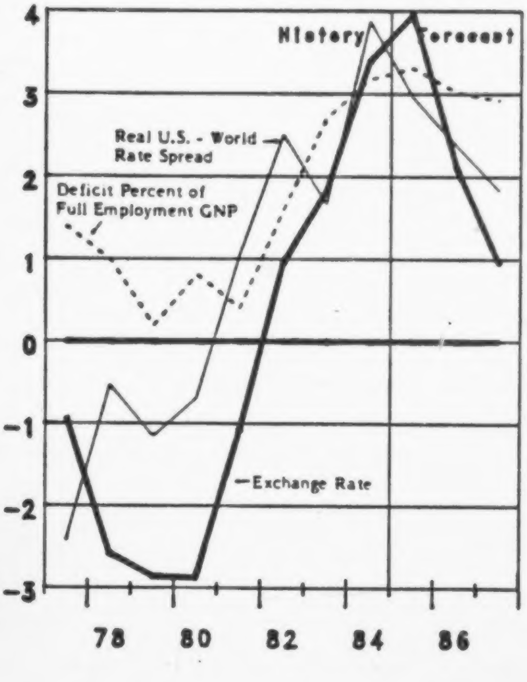

Uses of Funds - Percent of Total
Structures
23.5%
Federal
13.0%
Equipment
41.8%
21.8%
Res. Investment
1980
Structures
25.3%
Federal
8.1%
Equipment
42.5%
24.2%
Res. Investment
1970
Structures
19.9%
Federal
23.3%
Equipment
36.4%
20.4%
Res. Investment
1984



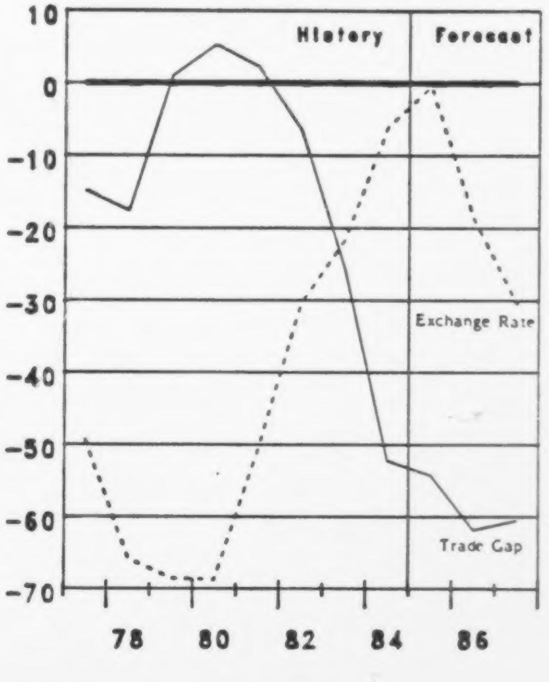
Trade-Weighted Exchange Rate Level
(Pre-June, 1970=1)



Nominal Bond Yields
U.S. and World



The Role of the Federal Budget Deficit



The Rising Trade Gap

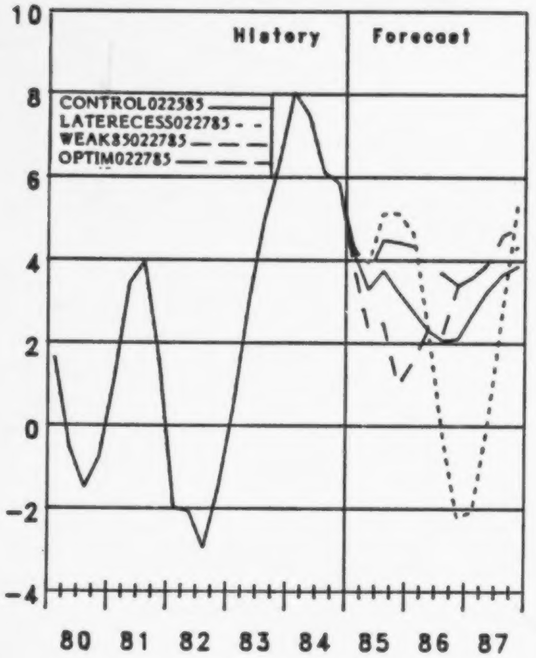
Comparison of Alternative Forecasts

Probability	CONTROL (.55)	LATERECESS (.20)	WEAK85 (.15)	OPTIM (.10)
Fiscal Policy	Most of Reagan expenditure cuts	No further action	As in Control	More expenditure cuts than Control
Deficit (end 1987)	$207 bn	$255 bn	$192 bn	$109 bn
Monetary Policy	Moderate	Tight	Moderate	Looser
Federal Funds Rate				
Peak	11.8%	14.3%	11.9%	8.4%
End 1987	11.8%	9.6%	11.9%	7.3%
Yield Curve	Flattening	Inverted by early 1986	Flatter than Control	Flattening
Real GNP*	Moderate growth	Recession mid-1986	Growth recession in 1985	Faster growth
1985	3.2%	5.1%	1.0%	4.4%
1986	2.1%	-2.2%	3.4%	3.4%
1987	3.9%	5.4%	4.8%	4.3%
Inflation*	Low	Moderate	Low	Even lower
CPI (1985)	3.4%	4.3%	3.4%	2.9%
Hourly Compensation (1985)	3.8%	5.1%	3.7%	3.7%
Productivity Growth	Moderate	Weaker	Moderate	Stronger
Average	1.8%	1.6%	1.7%	2.0%
Dollar	Weakening	Sharp drop late 1985	Stronger early, then sharp decline	Weakening more rapidly
End 1987	Down 15%	Down 20%	Down 28%	Down 22%
Current Account Deficit End 1987	-$160 bn	-$137 bn	-$140 bn	-$148 bn
Oil Prices (end 1987)	$26.75	$27.35	$29.75	$25.00
Farm Prices (1985)	-2.8%	-2.6%	-2.8%	-3.1%
Consumer Confidence	Moderate	Strong; weakening in 1986	Weakening in 1985; then recovering	Strong
Saving Rate (avg)	5.2%	5.5%	5.2%	5.1%
Unemployment Rate End 1987	7.2%	7.8%	7.1%	6.5%

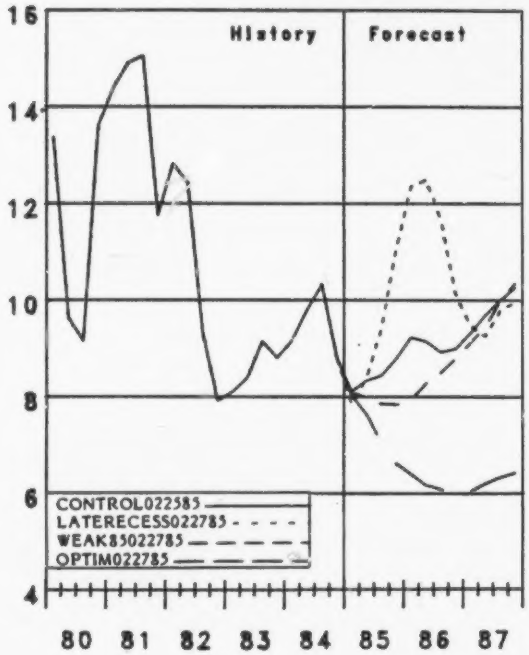
* Percent change fourth quarter over fourth quarter.

Alternative Scenarios

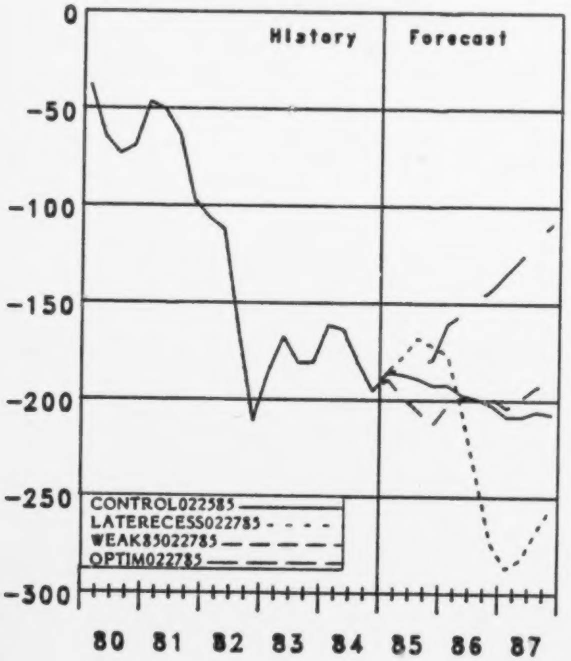
Real Gross National Product (Year-over-year percent change)



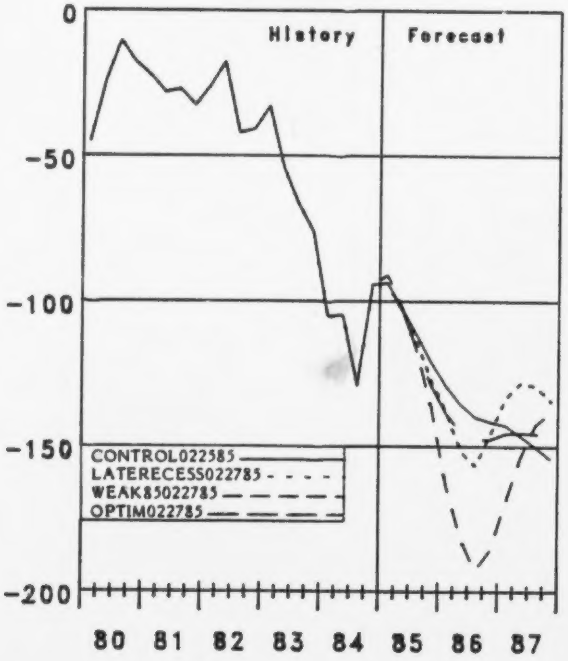
Rate on Three-Month Treasury Bills (Percent)



Federal Deficit ($ Billions, NIA basis)



Merchandise Trade Balance ($ Billions)



Arizona's Economy: In the Midst of a Boom

Marshall J. Vest*

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*Marshall J. Vest is a Research Specialist and Manager of the Forecasting Project at the Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona. DEBR's forecasting project is sponsored in part by Arizona Joint Legislative Budget Committee, First Interstate Bank of Arizona, Mountain Bell, Salt River Project, Tucson Electric Power Company and Valley National Bank.

Arizona's economy was the fastest growing in the nation last year. Wage and salary employment increased by almost 10 percent and approached 1.2 million. Job growth was fastest among the state's metropolitan areas but even the rural sectors gained over 5.5 percent. Slower growth in the construction and manufacturing industries will produce a slower pace in 1985, but the economy will remain extremely strong. In 1985, wage and salary employment will average 1,267,500, population will approach 3.25 million and personal income will reach almost $40 billion. Arizona's mining activity will continue to decline while defense spending and high-tech manufacturing continue to become increasingly important, and the major engine to further rapid growth. Over the longer term, Arizona is expected to continue to be one of the nation's fastest growing states.

In 1984, Arizona's economy exploded, registering one of the most rapid growth spurts on record. This expansion has been comparable to previous boom periods in 1972-73 and 1978-79. At the end of last year, Arizona had one of the lowest unemployment rates in the country at 4.1 percent, significantly below the 7.2 percent rate recorded nationwide. (See Figure 1) Only Massachusetts (3.4 percent), New Hampshire (3.4 percent) and Vermont (3.9 percent) recorded lower unemployment. Within the Four Corners States, all but New Mexico recorded lower unemployment rates than nationwide (see Table 1).

According to the U.S. Department of Labor, Arizona was also the fastest growing state in the nation last year, as measured by nonagricultural employment. In November, the number of jobs was 7.5 percent higher than a year earlier. Both Utah (#6) and New Mexico (#7) ranked in the top ten in job growth with gains of 5.1 and 4.0 percent, respectively. Colorado, which registered a 2.9 percent increase, ranked 16th. In the Four Corners States combined, employment increased 4.9 percent, far faster than the 3.3 percent gain recorded nationwide.

Arizona's rapid growth resulted from very strong advances in both of its metropolitan areas. When compared to 272 other metro areas nationwide, Phoenix recorded the third largest increase in jobs with an 8.9 percent gain. Tucson ranked 15th with a 6.2 percent increase. With the exception of the Denver-Boulder area, the other major metro areas in the Four Corners region also recorded strong advances: Las Cruces was the second-fastest growing area (up 9.6 percent), Salt Lake City-Ogden ranked 27th (up 5.2 percent) and Albuquerque was 30th (up 4.9 percent).

Figure 1

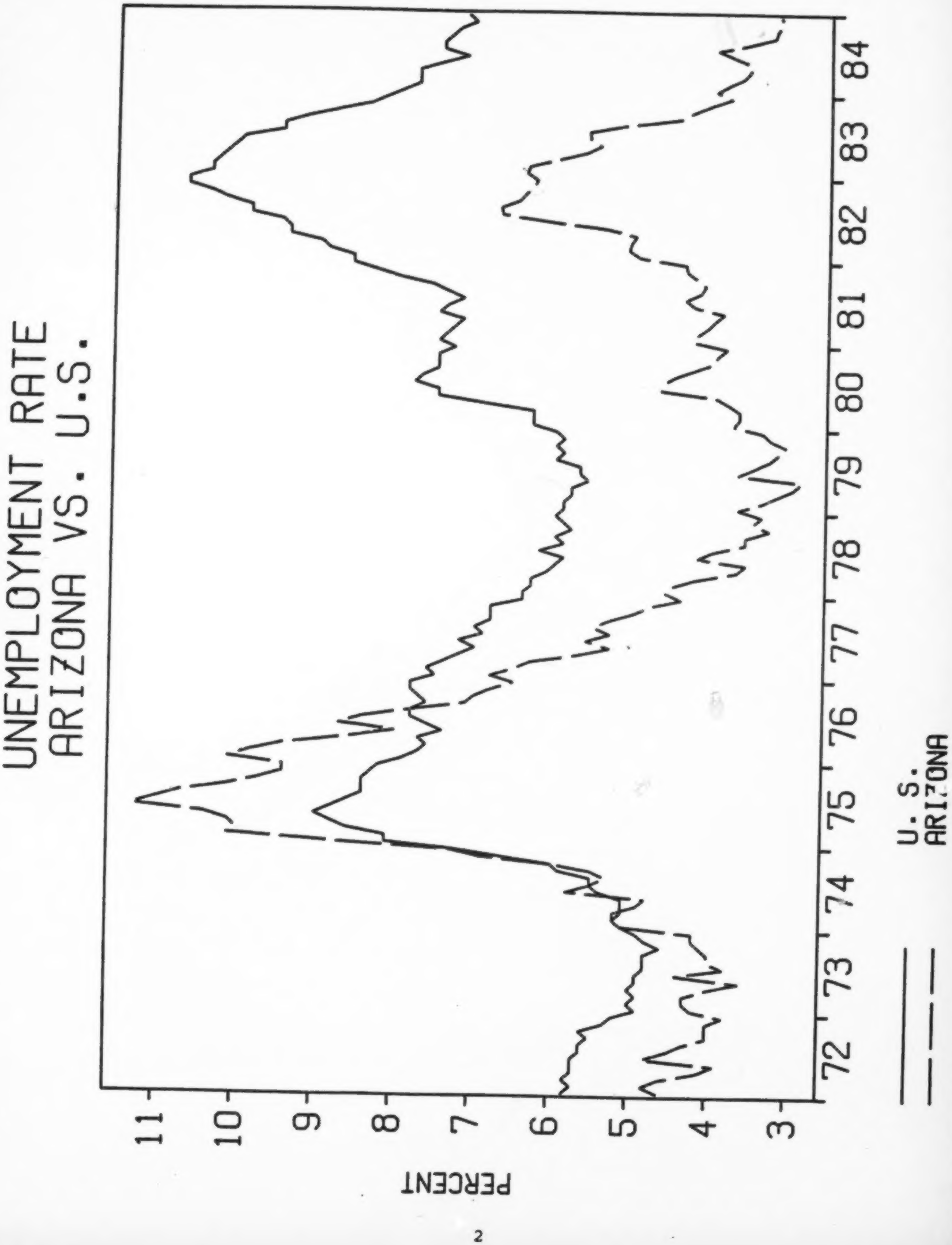
UNEMPLOYMENT RATE
ARIZONA VS. U.S.
PERCENT
11
10
9
8
7
6
5
4
3
72
73
74
75
76
77
78
79
80
81
82
83
84
U. S.
ARIZONA

Table 1

Total Nonagricultural Employment and Unemployment Rates for States and SMSA's in the Four Corners Area

	------Nonagricultural Employment (000's)---------				
	November '83	November '84	Percent Change	Ranking *	Unemployment Rate (Nov. '84)
ARIZONA	1,105.0	1,187.8	7.5	1	4.1%
Phoenix	716.7	780.5	8.9	3	3.1
Tucson	203.5	216.1	6.2	15	3.8
COLORADO	1,345.9	1,385.3	2.9	16	5.5
Denver-Boulder	870.9	892.9	2.5	122	4.9
NEW MEXICO	484.9	504.2	4.0	7	7.5
Alburquerque	202.5	212.5	4.9	30	6.3
Las Cruces	34.2	37.5	9.6	2	6.9
UTAH	584.7	614.7	5.1	6	5.9
Salt Lake City - Ogden	415.1	436.8	5.2	27	5.4
"FOUR CORNERS" STATES	3,520.5	3,692.0	4.9	-	5.4
UNITED STATES	92,406	95,453	3.3	-	7.2

* Rankings for states based on comparison to 50 states plus the District of Columbia. Rankings for SMSA's based on comparison to 272 metro areas.

Source: U.S. Department of Labor and Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona.

In both Arizona and New Mexico, the metro areas have grown much more rapidly than the non-metro, or rural, portions of the states. This has prompted concern among Arizona's policy makers and has sent them searching for solutions to the regional disparity of growth. Reasons most commonly heard for the difficulties in the rural areas are (1) the impact of the depressed mining industry on many small mining communities; (2) depressed trade with Mexico in our border communities due to that country's austerity program which began with three devaluations of the Mexican peso in 1982; and (3) tough economic conditions in the nation's farm sector.

Although these factors unquestionably impacted our rural areas, the size of the problem is very much in question due to the tendency of our statistical machinery to underestimate job growth during boom periods. After adjusting for the effects of the undercount, job growth in rural Arizona is much higher than officially reported. Although the disparity between metro and non-metro areas persists, the lesser performance of the non-metro areas clearly is not a disaster, as Table 2 shows. As originally reported, wage and salary employment statewide increased by 7.3 percent in 1984; the metro areas gained 8.2 percent while growth in the non-metro areas reached only 2.7 percent (an anemic performance by Arizona standards). The adjusted figures, however, show a quite healthy 5.6 percent gain in the rural areas! The crisis in Arizona's rural sectors would seem to be more apparent than real.

The inability of the official current estimates to accurately measure the rate of advance poses a major problem to forecasting. Therefore, the Division of Economic and Business Research (DEBR) has undertaken an effort to crudely "rebenchmark" the employment estimates

Table 2

Originally Published and New Estimates of Employment by Industry, Arizona with Metro and Non-Metro Comparisons

(percent changes, 1984 vs. 1983)

ARIZONA	Original*	New Estimates**
Mining	(4.7)	(6.0)
Construction	18.1	21.5
Manufacturing	8.6	10.6
Durable	9.9	12.0
Non-Durable	4.0	5.9
TCPU	6.0	5.7
Trade	6.6	10.0
Wholesale	7.2	12.4
Retail	6.4	9.4
FIRE	5.6	9.0
Services	8.9	13.1
Hotels	11.2	12.6
Business Services	17.2	25.9
Health Services	4.5	6.8
Government	2.8	NA
Wage & Salary	7.3	9.8
COMPARE		
Wage & Salary, Metro areas	8.2	10.5
Wage & Salary, Non-metro areas	2.7	5.6

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* As published in January 1985. Uses CPS-MOD 1/84 as benchmark date (UI data through 1Q83).

** DEBR estimate using employment insurance data through 2Q84.

NA: Employment in Government is not adjusted for survey undercounting.

Source: Arizona Department of Economic Security and
Division of Economic and Business Research,
College of Business and Public Administration,
The University of Arizona.

each quarter. Our econometric model, as well as the remainder of this article, use the DEBR revised estimates, which are shown in the second column of Table 2.

Current estimates indicate that wage and salary job growth in Arizona was 9.8 percent last year. The advance was broad based, with all sectors except mining recording substantial gains. The construction industry recorded the largest gain, 21.5 percent, followed by services (13.1 percent), manufacturing (10.6 percent) and trade (10.0 percent). The financial services industry increased a strong 9.0 percent, the transportation, communication and public utilities industry gained 5.7 percent, and government payrolls rose by 2.8 percent. The only sector to decline was mining which lost six percent of its workers.

Business conditions in 1985 should continue to be positive and although the rate of increase is expected to be less than experienced in 1984, the national and Arizona economies should continue to expand. (A review of national business conditions may be found elsewhere in this issue.) As shown in Table 3, wage and salary employment in Arizona is expected to advance by 7.3 percent this year followed by a gain of 5.6 percent in 1986.

Construction

The slower rate of growth expected in 1985 reflects a maturing of the construction boom. Almost 79,000 new housing units were authorized in 1984, up 23 percent from the record 63,902 units recorded in 1983. Multi-family units were extremely strong, spurred on the supply side by the availability of financing in the form of tax-free bonds and a tremendous inflow of syndication money seeking tax shelters.

Table 3

Forecasts for Arizona

Selected Measures

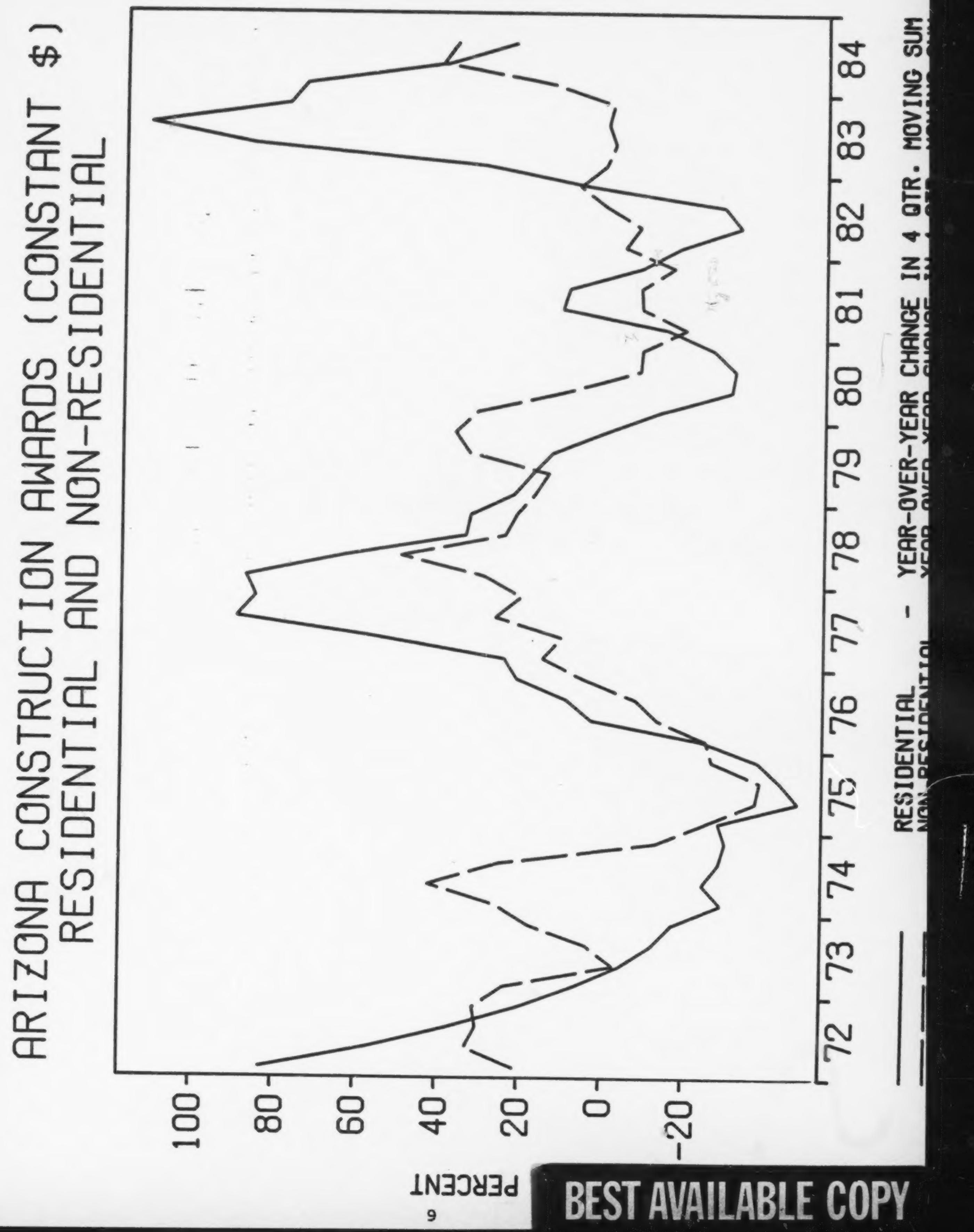
	1983	1984	1985	1986	1987
Personal Income ($ millions)	31,575.5	35,132.3	38,366.3	42,005.2	46,396.2
percent change	8.6	11.3	9.2	9.5	10.5
Real Disposable Personal Income (millions of 1967$)	9,153.0	9,806.3	10,365.6	10,944.1	11,565.9
percent change	6.8	7.1	5.7	5.6	5.7
Retail Sales ($ millions)	17,178.3	19,214.8	20,848.8	22,737.3	24,977.8
percent change	10.7	11.9	8.5	9.1	9.9
Retail Sales (millions 1967$)	5,736.8	6,147.9	6,430.5	6,748.1	7,084.9
percent change	8.5	7.2	4.6	4.9	5.0
Population (000's, mid-year)	2,962.3	3,095.7	3,222.8	3,340.4	3,454.2
percent change	3.4	4.5	4.1	3.6	3.4
CPI,Western Region (1967 = 100)	299.2	312.5	324.1	336.8	352.4
percent change	1.9	4.4	3.7	3.9	4.6
Wage & Salary Employment (000's)	1,076.2	1,181.2	1,267.5	1,338.6	1,409.5
percent change	4.5	9.8	7.3	5.6	5.3
Mining	14.6	13.7	13.4	14.7	16.4
percent change	(17.6)	(6.0)	(2.3)	9.7	11.6
Manufacturing	155.7	172.2	185.7	198.4	213.0
percent change	0.7	10.6	7.8	6.9	7.3
Construction	79.0	96.0	103.8	107.5	108.6
percent change	22.0	21.5	8.1	3.6	1.1
Transportation, Communications and Public Utilities	57.0	60.3	64.1	67.1	70.1
percent change	0.7	5.7	6.4	4.6	4.4
Trade	261.2	287.2	308.2	323.8	340.5
percent change	3.4	10.0	7.3	5.1	5.1
Finance, Insurance and Real Estate	65.9	71.9	75.6	79.5	83.5
percent change	6.3	9.0	5.1	5.1	5.1
Services	240.8	272.3	300.5	325.2	348.7
percent change	8.6	13.1	10.4	8.2	7.2
Government	202.1	207.7	216.3	222.4	228.7
percent change	1.1	2.8	4.1	2.8	2.8

Source: Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona.

The 1981 tax law with its accelerated cost-recovery provisions and a shorter tax life on structures was also a positive factor. On the demand side, building was supported by strong population gains. Statewide, population increased by more than 132,000 last year, a 4.5 percent gain. Very strong in-flows of migrants are expected to continue this year and into 1986. However, builders are becoming more cautious as vacancy rates in both multi-family and offices increase. Multi-family vacancies at the end of last year were running in the 8-10 percent range in both metro areas and another 6-7 percent of the existing stock was under construction. Office vacancies were running in the neighborhood of 20 percent with numerous large projects in the pipeline. Given the long contruction time on these projects, building activity should remain very strong throughout 1985.

Figure 2 provides a visual of Arizona's building cycle. The rate of change in residential contract awards has slowed down while the non-residential component is still surging. For the 12-month period ending in December, residential awards were up 17.5 percent in real terms (in mid-1983 this measure was well in excess of 100 percent), and non-residential was up 46.1 percent. (Rates of change graphs are leading indicators of their own levels.) In 1985 we expect residential construction activity to decline by about 10 percent, which would still be the second-best year on record. Non-residential building will more than offset the residential sector to keep construction employment rising by 8.1 percent this year and 3.6 percent in 1986.

Figure 2



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Manufacturing

Arizona's manufacturing industry grew quite rapidly in 1984, with employment reaching 172,200, an increase of 10.6 percent (see Table 4). While nondurable goods grew by 5.9 percent, durable goods payrolls surged 12.0 percent. Stone, clay and glass and lumber and wood products, both construction related, recorded gains of 18.4 and 23.2 percent, respectively. Fabricated metals increased 14.7 percent, aircraft and missiles grew 11.6 percent and the "all other durable goods" category, which includes instruments, increased by 13.0 percent. The machinery industry, which in Arizona is dominated by the production of computers, gained 10.7 percent.

In Arizona, 135,400 workers or almost 79 percent of total manufacturing are employed in the durable goods sectors. The proportion nationwide is only 59.4 percent.

According to a recent study of high technology in Arizona,* there are over 300 high technology manufactaurers who employed 75,000 workers in 1982, almost half of the state's manufacturing work force. An estimated $5 billion in shipments were generated by those firms. Nationwide, high tech comprises only 15 percent of total manufacturing. In this study, the high tech industry includes the manufacture of communications and aerospace equipment, electronic components, electronic and optical instruments, office and computing machines and parts, and medical electronic equipment. Table 5 compares the composition of high tech employment in Arizona and the U.S.

Major high tech companies and the products they produce are shown in Table 6. The list includes such firms as Motorola, Hughes, IBM,

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*High Technology in Arizona: A Market Analysis of Suppliers In Arizona and the Southwest, State of Arizona Office of Economic Planning and Development, January 1984, 24 pages.

Table 4

Employment in Manufacturing, Arizona

1983 and 1984

(000's)

	1983	1984	Percent Change
Manufacturing	155.7	172.2	10.6
Durable Goods	120.9	135.4	12.0
Stone, Clay & Glass	6.2	7.4	18.4
Primary & Fabricated Metals	14.4	15.7	8.9
Primary	6.1	6.2	1.1
Fabricated	8.3	9.5	14.7
Machinery	61.4	68.0	10.7
Other Durable Goods	38.9	44.4	14.1
Aircraft & Missles	17.8	19.8	11.6
Lumber & Wood Products (Except Furniture)	6.6	8.1	23.2
All Other Durable Goods	14.6	16.5	13.0
Nondurable Goods	34.8	36.8	5.9
Food & Kindred Products	8.0	7.8	(2.4)
Apparel	4.9	4.9	0.4*
Printing & Publishing	12.2	13.4	10.4
All Other Nondurable Goods	9.7	10.6	9.9

*Percent change computed on unrounded levels.

Source: Arizona Department of Economic Security and Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona.

Table 5

Composition of High Technology Manufacturing Employment 1982, U.S. and Arizona (percent)

	Arizona	U.S.
Computers	11 %	3%
Electronic Components	19	3
Aerospace Equipment	12	4
Communications	3	3
Instruments	4	2
All other Manufacturing	51	85
Total	100%	100%

Source: High Technology in Arizona: A Market Analysis of Suppliers in Arizona and the Southwest, State of Arizona, Office of Economic Planning and Development, January 1984, p. 5.

Table 6

Major High Tech Companies in Arizona

Company	Location	Employment	Products
Burr-Brown	Tucson	1,100	Data Conversion Products, Microcomputer Systems
Digital Equipment Corp	Phoenix/Tempe	1,700	Computers, Printed Circuit Boards
Garrett Corp	Phoenix, Tucson	7,600	Turbine Engines, Pneumatic Systems, Avionics
Gates Learjet	Tucson	1,200	Jet Aircraft
General Instrument	Chandler/Tucson	800	Micro Electronic Circuits, Power Supplies
Goodyear Aerospace	Goodyear (Phoenix)	1,500	Radar Systems, Intelligence Data, Processing Systems
GTE	Phoenix/Tempe	1,000	Microcircuits, Telecommunications Equipment
Honeywell	Phoenix	3,000	Computers, Process Management Systems
Hughes Aircraft	Tucson	6,200	Missle Systems
Hughes Helicopter	Mesa	1,000	Military Helicopters
IBM	Tucson	5,000	Information Storage Computer Devices
ITT	Phoenix/Tempe	2,900	Computer Terminals, Connectors
Intel	Phoenix/Chandler	2,200	Semiconductors
Motorola	Phoenix/Mesa	21,000	Semiconductors, Electronic Systems for Aerospace
National Semi-Conductor	Tucson	5,000	Integrated Circuits
Sperry	Phoenix/Glendale	4,500	Avionics
TEC, Inc.	Tucson	500	Terminals, Switches, Keyboards

Source: High Technology in Arizona: A Market Analysis of Suppliers in Arizona and the Southwest, State of Arizona, Office of Economic Planning and Development. January 1984, p. 6.

Honeywell, National Semiconductor, Intel, Sperry, Gates Learjet and Digital Equipment Corp. (DEC), to name a few. The types of products range from missiles to computers, jet aircraft to semiconductors and from avionics to turbine engines. Table 7 provides additional insight into Arizona's specialties and how it compares to other states in the Four Corners area. In 1982, both Arizona and Colorado shipped approximately $5 billion of product. Utah's shipments totaled $1.5 billion and New Mexico's roughly $470 million.

Defense spending is a major component of Arizona's manufacturing industry. As shown in Table 8, the net value of Department of Defense (DOD) Military Procurement Actions in 1983 totaled $1.35 billion in Arizona, about 38 percent of all procurement in the Four Corners States and about 1.2 percent of the national total. Over the five year period, DOD procurement spending in Arizona has increased by almost 95 percent. Most of the companies in Table 6 are at least indirectly involved in DOD procurement and many have estabilished separate divisions to handle government contracts. For example, Hughes Helicopters produces the new army attack helicopter, Gates Learjet is currently supplying its Model 35 jets to the Air Force, and Hughes Aircraft makes Maverick, Phoenix, TOW and AMRAAM missiles for all branches of the military. Because of Hughes, Arizona is the second largest producer of missiles in the U.S., behind California.

Manufacturing employment should continue increasing at a brisk, albeit slower pace than recorded last year. Defense procurement promises to remain strong and semiconductors should see continued growth as soon as the inventory correction in that industry is complete. Construction related sectors should slow down appreciably in

Table 7

High Tech Centers in the Four Corners States: Estimated Shipments and Specialties

	High Tech Shipments 1982 Value	Specialties
Arizona	$ 5 billion	
Phoenix		Aerospace, avionics, CAD/CAM, printed circuit boards, semiconductors, main frame computers
Tucson		Solar energy research, microchips, geological survey equipment, chemical production, missles, microcomputers, aircraft, disk drives
Colorado	$ 5 billion	
Denver/Boulder		Disk drives, agrigenetics, semiconductors, recombinant DNA production, agricultural research
Colorado Springs		Aerospace, semiconductors, defense electronics, telecommunications
New Mexico	$ 700 million	
Albuquerque, Santa Fe, Los Alamos		Microprocessors, lasers, genetic engineering medical diagnostics
Utah	$ 1.5 billion	Biomedical research, artificial organ production, CAD/CAM, robotics energy mechanics

Source: High Technology in Arizona: A Market Analysis of Suppliers in Arizona and the Southwest, State of Arizona, Office of Economic Planning and Development, January 1984, p. 10.

Table 8

Net Value of DOD Military Procurement Actions, Four Corners States and United States

($000's)

	1979	1980	1981	1982	1983	Percent Change 1979 - 1983
Arizona	692,937	727,193	1,123,332	1,490,164	1,350,698	94.9
New Mexico	259,297	286,126	383,024	455,289	447,272	72.5
Colorado	411,917	509,859	935,294	1,072,444	999,992	142.8
Utah	226,425	250,881	403,988	561,913	718,975	217.5
Four Corners States	1,590,576	1,774,059	2,845,638	3,579,810	3,516,937	121.1
State Totals	56,653,145	66,293,845	85,879,999	102,071,352	117,037,692	106.6
Not distributed by State	8,827,886	10,136,538	8,389,654	9,031,753	12,904,668	46.2
U.S. Total	65,481,031	76,430,383	94,269,653	111,103,105	129,942,360	98.4

Source: U.S. Department of Defense and Division of Economic and Business Research, College of Business and Public Administration, The University of Arizona concert with our expectations for construction. Our model forecasts a 7.8 percent increase this year followed by a 6.9 percent gain in 1986.

Mining

In Arizona, the mining industry predominantly involves the production of copper. In 1984, the value of copper production exceeded $1.0 billion, or three-fourths of all nonfuel minerals produced. (See Table 9) Molybdenum, silver and gold, the major by-products of copper production exceeded $112 million, or roughly 10.0 percent of the total. The remaining amounts were primarily construction related: cement ($118 million), crushed stone ($27 million) and sand and gravel ($75 million).

As shown in Table 10, Arizona is the leading U.S. producer of copper, accounting for roughly two-thirds of nationwide production. Utah is the second largest producer, accounting for roughly 15 percent, followed by Montana at two to three percent.

The industry has been in a protracted recession since early 1982. In June of 1981, there were 22,500 miners working in Arizona's copper industry. At the end of last year there were only 10,100. Table 11 shows estimated copper production in Arizona by mine. As of August of last year fully one-half of Arizona's mines were closed. Low prices, high costs of production, low-grade ore bodies, a strong U.S. dollar, high costs of pollution control, imports from foreign producers -- many of which are government owned, declining end-use markets due to smaller cars and to increased use of substitutes such as fiber optics are all mentioned as reasons for the industry's decline.

Producers have cut production schedules, cut costs and rolled back wages, yet they continued to lose money last year. Several mines

Table 9

Nonfuel Mineral Production in Arizona

Product	Values ($1,000) 1983	Values ($1,000) 1984^P
Clays	$ 1,425	886
Copper	1,144,285	1,044,483
Gem Stone	2,800	2,800
Gold	26,284	W
Gypsum	1,929	2,411
Lead	69	W
Lime	16,700	19,716
Molybdenum	79,459	78,827
Pumice	15	18
Sand & Gravel		
Construction	75,000^E	74,500
Industrial	W	W
Silver	51,383	33,557
Stone		
Crushed	24,079	26,800
Dimension	1	*
Combined Value of Cement	87,449	118,323
Total	$ 1,510,878	$ 1,402,321

W Withheld due to proprietary data.

E Estimate

P Preliminary data.

* less than .5

Source: U.S. Bureau of the Mines, Department of Interior.

Table 10

Recoverable Copper Production in the United States

(Metric Tons)

	------1983------		-1984 (Through August)^{P}----	
	Tons	Percent	Tons	Percent
Arizona	678,216	65.3	489,156	67.2
Idaho	3,556	0.3	2,586	0.4
Missouri	7,725	0.7	W	-
Montana	33,337	3.2	11,601	1.6
Utah	169,751	16.4	99,070	13.7
Other	145,513	14.1	125,631	17.2
Total U.S.	1,038,098	100.0	738,044	100.0

P - Preliminary data

W - Withheld to avoid disclosing company proprietary data. Placed in Other States.

Source: U.S. Bureau of Mines, Mineral Industry Surveys, Copper, August 1984.

Table 11

ARIZONA COPPER MINES
Estimated Production - 1983

County:	Mine	Tons Cu. (1979 Production)	Tons Cu. 1983 Production
Cochise:	Bisbee leach	3,400	2,600
	* Johnson	4,500	4,860
Gila:	Miami	5,700	4,640
	Pinto Valley	62,100	7,720
	* Christmas	6,100	-0-
	Inspiration	40,500	39,490
	* Blue Bird/ Old Rel.	5,400	-0-
Greenlee:	Morenci/Metcalf	177,000	178,000
Mohave:	* Mineral Park	13,100	-0-
Pima:	* Twin Buttes	133,400	31,660
	San Xavier	5,200	11,280
	* Silver Bell	19,800	9,010
	* Pima	7,700	-0-
	* Esperanza	16,900	-0-
	Sierrita	91,600	91,600
	* Ajo	39,000	37,300
	Mission	34,000	23,850
	Eisenhower		22,320
Pinal:	* Sacaton	19,400	13,790
	Ray	86,200	10,020
	San Manuel	105,300	99,700
	* Superior	35,500	-0-
Yavapai:	* Bagdad	59,400	81,030
Total	Tons	971,200	668,870

* Mines which are shut down as of August 1984, Other mines may be operating at less than capacity.

** 1982 total productin of recoverable copper: 854,337 Tons.

1983 was approx. 22% below 1982 levels and 31% below 1979 capacity.

Data from Division of Mineral Resources, Tucson, and for Duval and Phelps Dodge, from Annual Reports.

are for sale and major oil companies are looking to divest themselves of their mining operations: Amax and Anaconda have offered their shares of the Twin Buttes mine for sale. Standard Oil of Indiana is spinning off its Cyprus Minerals subsidiary, Pennzoil would like to sell its Duval subsidiary and Atlantic Richfield took a $785 million charge to write down its Anaconda unit. Recently Phelps Dodge, Arizona's largest producer and the nation's second largest, sold a share of its operations to Sumitomo, a Japanese company, to obtain a needed infusion of cash. Phelps Dodge, after taking a $195 million charge posted a loss of $267.8 million last year.

Unfortunately there does not appear to be any bright spots on the horizon. Our forecast calls for a further decline in employment this year. Statewide, mining accounts for only one percent of total employment and as such the industry has little effect on the overall economy.

Service Producing Sectors

Two-thirds of the jobs created nationwide since November 1982 are in the service-producing sectors. This partly reflects the on-going restructuring of the economy from the goods-producing sectors toward a more service-based economy. It also reflects a strong dollar and the depressing effects of a large trade deficit on manufacturing. This national trend also is mirrored in Arizona. During the past two years 120,000, or two-thirds, of all new jobs were created in Arizona's service-producing sectors. The fastest growing components have been business services, such as temporary employment agencies, public relations, advertising and janitorial services, as well as hotels, trade and financial services. (See Table 2).

One of the reasons for the tremendous increase in temporary help agencies has been the increased use of temporary and contract employees by the manufacturing industry. These people are not just clerical but technicians, assemblers and engineers as well. Firms are hoping to avoid layoffs, and with a contract employee, if orders fall off, or if project funding expires, the contract is not renewed.

The tourism industry is booming as evidenced by the addition of several new destination resorts and numerous commercial hotels. In Tucson, for example, the number of hotel rooms have nearly doubled in two years. At the start of 1982, Tucson had about 6500 rooms; only 500 were added between 1964 and 1982. Then, in 1982, over 1600 rooms were added. Another 1000 rooms arrived in 1983 and 1984. At the beginning of 1985 there were over 1200 under construction and almost 1600 more on the drawing boards. Phoenix is recording a similar expansion: in 1984 and 1985 the number of first class rooms is expected to increase by 20 percent.

The financial services industry is also undergoing rapid change. Chase and Citibank have opened "non-bank" banks and since March of 1982 twenty new banks have been chartered, bringing the number at year-end 1984 to 46. This legislative session is considering a bill that would open Arizona to interstate banking with some restricitons after October 1, 1986. The bill would allow out-of-state holding companies to acquire or merge with Arizona banks and savings institutions and allow banks from any of the other 49 states to do business in Arizona. However, banks filing for charters after June 1, 1984 would be barred from merger or acquistion for five years. Also out-of-state banks could not start new institutions until July 1, 1992.

As shown in Table 3, the major service-producing components are expected to show very strong yet slower growth this year and next. Services should increase by 10.4 and 8.2 percent, trade by 7.3 and 5.1 percent, and financial services should increase an average 5.1 percent.

Government

Employment in Arizona's governmental sectors declined in 1981 and registered only minuscule increases in 1982 and 1983, largely due to fiscal restraint on all levels of government. The decline in 1981 was largely the result of state-wide reforms to the property tax, which produced a major dislocation in the financing of our school system. The following two years reflected cutbacks in federal, state and local non-education sectors. In 1984, government employment increased by 2.8 percent and was led by the education sector as school enrollments surged in concert with a rapidly growing population. Increases this year are expected to be in the neighborhood of four percent, which will make this sector the slowest growing, except for mining, of course, which will be in decline.

State Government Finances

Arizona's state government, along with the governments of many other states, experienced difficulty maintaining a balanced budget during the last recession. Spending was curtailed, a temporary one cent increase in the transaction privilege tax was imposed, the collection of many revenue categories was speeded up and some creative accounting approaches were implemented to avoid running a deficit, which is prohibited by Arizona's constitution. At the end of fiscal 1983, the amount carried forward was only $130,000. (See Table 12.) In fiscal 1984, with the additional revenues from the sales tax, which

Table 12

Arizona State Government Finances
Fiscal Years 1976 to 1986
($ millions)

Fiscal Year (ending June 30)	General Fund Appropriations	"Carry Forward"
1976	745.6	14.7
1977	822.7	53.6
1978	1,030.6	32.3
1979	1,068.0	117.1
1980	1,189.6	234.3
1981	1,498.5	133.4
1982	1,632.7	17.5
1983	1,613.7	0.1
1984*	1,863.6	11.6
1985	2,129.2 (est)	36.7
1986	2,352.5 (est)	40.0

* Does not reflect impact of carry-over appropriations effecting surplus as provided by 35-190.01 A.R.S.

Source: Arizona Joint Legislative Budget Committee, Annual Budget, Fiscal Year 1985, Summary.

eventually became permanent, and a very strong performance from the economy, appropriations jumped 15.5 percent to $1.863 billion and the carry forward reached $11.6 million. Fiscal 1985 appropriations are up 14.3 percent and the carry forward is expected to approach $40 million, which has prompted Arizona's Governor Babbitt to call for a one-time credit on the income tax to give back the surplus. At the same time legislators are addressing the need for additional money to finance the construction of highways and urban freeways to keep up with the rapidly growing population. An increase in the state's gasoline tax of five cents per gallon (currently the tax is 13 cents) or another 1/2 to one cent boost in the sales tax is being considered. The only certainty is that the state's fiscal crisis of a few years ago has long since past.

Summary

In reviewing the remaining forecasts shown in Table 3, a warning must be issued in regard to personal income. Our model is using current estimates of income generated by the Bureau of Economic Analysis (BEA) -- estimates that are woefully inadequate. Table 13 reviews these estimates. According to BEA's estimates, for the year ending in the third quarter of 1984, personal income in Arizona increased 11.0 percent, only slightly faster than the 10.3 percent gain for the entire Four Corners Area. Colorado, whose employment increased by less than 3.0 percent, registered a 9.6 percent gain. Arizona's employment was growing at more than twice as fast as Colorado's, yet Arizona's personal income estimate was only 1.4 percent points higher. The problem is further illustrated in Figure 3 which compares the wage and salary component of BEA's estimate to wage and salary disbursements reported in the UI program. Although the BEA and UI estimates

Table 13

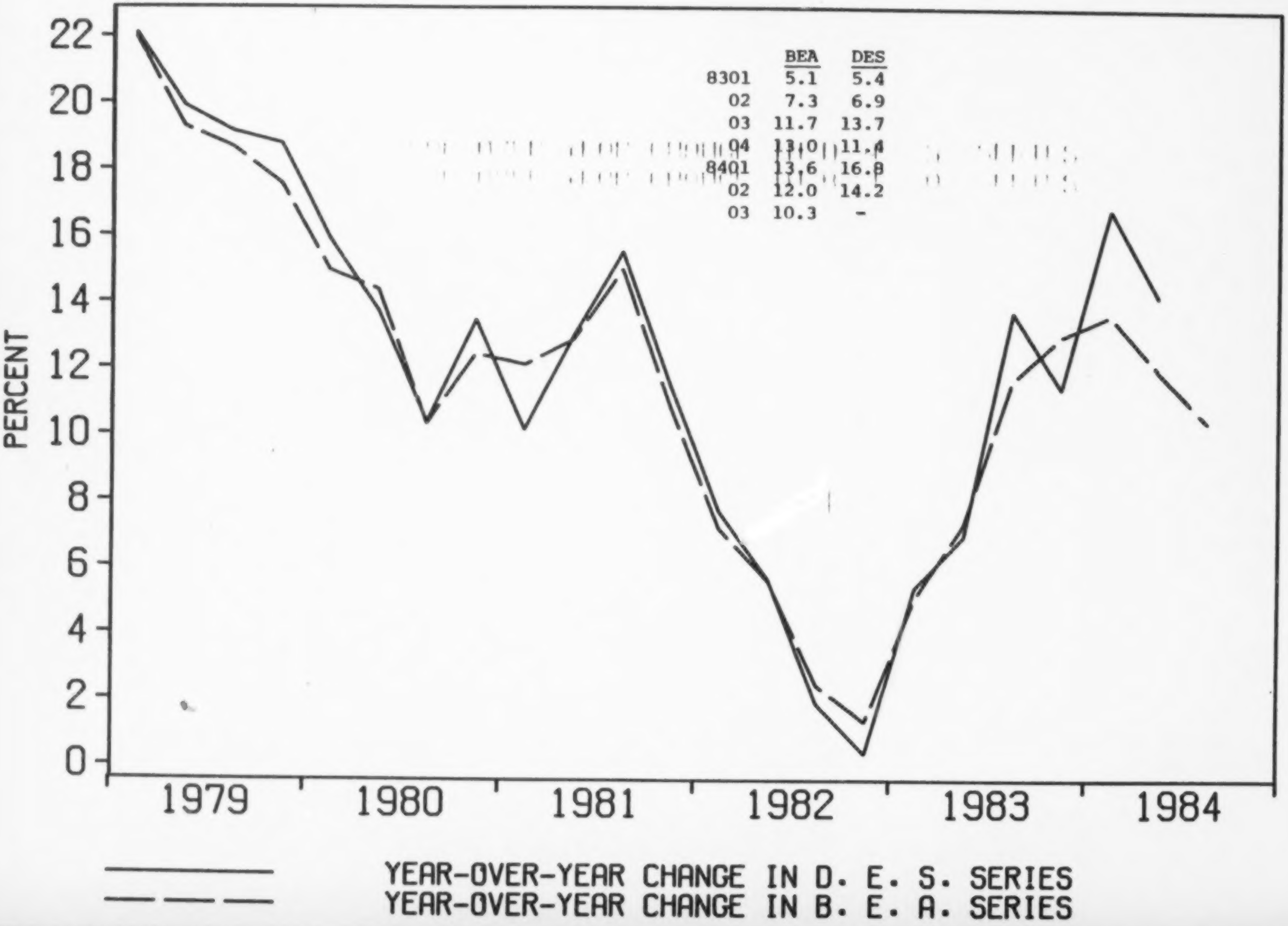
Total Personal Income by State,
Four Corners Area and United States, 3Q83 & 3Q84
(millions of dollars, SAAR)

	3Q83	3Q84	Percent Change
Arizona	$ 32,155	$ 35,705	11.0
Colorado	40,307	44,191	9.6
New Mexico	13,632	15,018	10.2
Utah	14,660	16,225	10.7
Four Corners Area	100,754	111,139	10.3
United States	2,753,109	3,032,708	10.2

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Figu 3

TOTAL WAGE AND SALARY DISBURSEMENTS
ARIZONA



	BEA	DES
8301	5.1	5.4
02	7.3	6.9
03	11.7	13.7
04	13.0	11.4
8401	13.6	16.8
02	12.0	14.2
03	10.3	-

track closely historically (they should, since the BEA estimate is based on UI data), the BEA estimates seriously understate reality starting as early as the third quarter of 1983. Over the four quarters ending in 2Q84 the UI component increased roughly 14.0 percent. BEA's estimate was only 12.5, and in 3Q84, BEA's estiamte was only 10.3 percent higher than the year earlier period.

Our best estimate for Arizona's personal income growth in 1984 is 13.5 percent. Our model, however, is still using BEA's estimates and is showing only an 11.3 percent gain. Our forecast for 1985, a 9.2 percent gain probably is also understated: an increase of 10-11 percent would be more likely. The 9.5 percent gain for 1986 is probably reasonable.

The forecasts for retail sales, since they depend on disposable personal income are likely understated as well and should be adjusted upward similar to the adjustments for personal income.

Finally, strong migration flows are expected to continue which will keep population growing in the 3.5 to 4.0 percent range over the next few years. If current trends continue, by 1990 Arizona will overtake Colorado and become the largest state in the Mountain States region. And if projections by the Census Bureau are accurate, Arizona will be the 13th largest state in the year 2000, and will have nine congressional seats.

The factors that made Arizona one of the fastest growng states during the past two decades continue unchanged today as recent evidence reveals. The only problem in the short run pertains to the inability of our statistical mill to measure the magnitude of the advance.

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OUTLOOK FOR THE
COLORADO ECONOMY

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THE COLORADO ECONOMIC OUTLOOK

SHORT AND LONG TERM

OVERVIEW

The Colorado economy has been compared to a developing nation because of its dependence upon resource industries and services. At the same time, it has been described as leading the rest of the nation into an economic future where a large share of the work force is employed in the information processing, services and high tech manufacturing. Although both views at times describe the state economy, the latter picture seems more relevant for the future. The state is emerging from a decade when accelerating inflation and control of world oil markets by a cartel of short term profit maximizers propelled the resource industries-oil and gas exploration, coal and molybdnemum mining and agriculture, to the forefront. However, the last two years have seen a transition back to the more persistent pattern of declining importance for mining and agriculture.

The behavior of the state economy over the latest business cycle highlights the end of this most recent surge in resource economy. The late 1970's and early 1980's saw a prosperous mining sector, booming oil and gas exploration and even a reasonably healthy farm economy. However, declining inflation, a stronger dollar and the collapse of world oil markets brought resource based prosperity to an end. For the first time in nearly 20 years, the Colorado economy lagged that of the nation as a whole. Over the past two years, most state economic indicators have shown a rate of growth at or below that of the U.S., a marked contrast to the previous 15 years when Colorado's real growth exceeded national gains by about 2% per year.

This temporary sluggishness reflects the liquidation of some of the excesses of the energy boom and the relative strength in other parts of the nation. The outlook for Colorado calls for renewal of growth at above the national rate, but with the growth based on durable manufacturing, trade and services rather than the resource industries.

SHORT TERM FORECAST

RECENT DEVELOPMENTS

After consistently exceeding the national growth rate, the pace of the Colorado economy slowed over the past two years. Non-agricultural wage and salary employment for Colorado and the nation is shown in Chart 1 below. The chart is indexed to the highest level registered before the 1982 downturn. For the nation, the pre-recession peak occurred in mid 1981 while Colorado's recovery continued into early 1982. Colorado's employment decline was less than that of the U.S. However, since the recovery began in the fourth quarter of 1982 Colorado employment growth has lagged that of the nation. Such growth reflects the greater severity of the national decline, the impact of sagging raw materials upon the State and more timely updating of national statistics. It should be emphasized that recent data do not indicate any structural weakness in the Colorado but are a result of a temporary surge in basic industries in many parts of the nation and weakness in Colorado's resource sectors.

State growth slowed markedly through the Fall of 1984. Factors contributing to slowing in the state include the slump in homebuilding, layoffs in electronics and air transportation, and continuing weakness in the states mining and energy sectors. Employment fell between the second and the third quarter on a seasonally adjusted basis in mining, construction, regulated industries and wholesale trade. Services saw only a weak quarter-to-quarter gain. The current weakness reflects a slowing in both state and national economies which occurred over the last 12 months. Nationally employment increased at an annual rate of almost 6% in the 4th quarter of 1983, but fell to a 3% increase in the 3rd quarter of 1984. In Colorado, the comparable figure fell from 3.5% to 1% over the same period.

Current Colorado and comparable U.S. economic data are shown in Table 1. Evidence of slower Colorado growth in the third quarter of 1984 is ample. State payroll employment was essentially unchanged from the second quarter level. Sales growth slackened in late 1985 after solid gains early in the year and housing starts in Colorado plummeted. The state pattern was similar to that seen at the national level where growth also slowed in the third quarter.

More recent data suggest that third quarter sluggishness was a temporary slowdown rather than a harbinger of recession. Both state and national indicators registered signs of renewed strength in early fourth quarter statistics. Homebuilding picked up in November in delayed response to falling interest rates. Christmas sales finished strongly after an anemic early performance. In Colorado, November and December employment gains suggested a renewal of stronger growth for the state in early 1985.

Some of the blame for the apparent weakness in the Colorado economy can be attributed to lack of timeliness of employment data. Although payroll employment data suggest a weak recovery, other measures indicate somewhat more vigorous growth over the same period. Chart 2 below compares Colorado and U.S. employment growth based on employment by place of residence. This measure is an estimate of number of persons working as contrasted to the nonagricultural wage and salary or place of work estimates described above which measure the number of jobs. The place of residence employment shows a much stronger relative performance for the state than does the state of work. For example, November 1984 Colorado employment shows a gain of 70,000 workers from November 1983 based on the place of residence estimate while the place of work measure indicates a year-to-year gain of only 40,000 over the same period. Reasons for this discrepancy are not clear, but it suggests that the state growth over the past two years may have been somewhat stronger than indicated by place of work employment estimates.

Chart 1

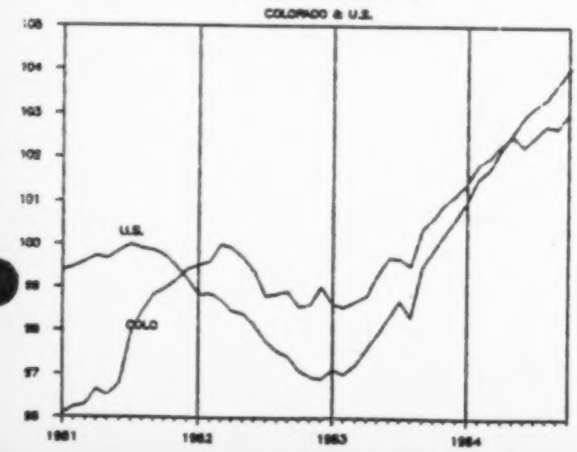
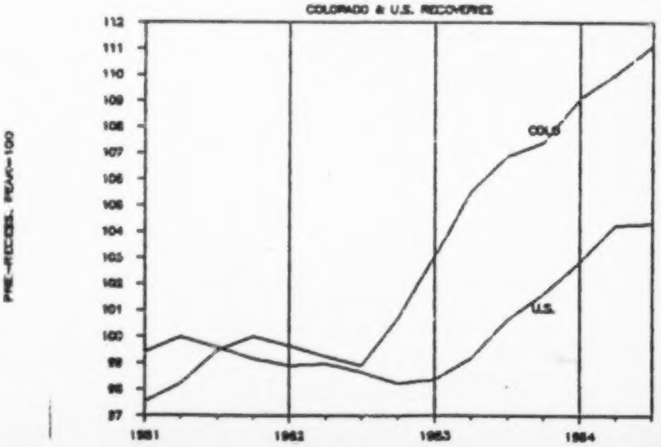


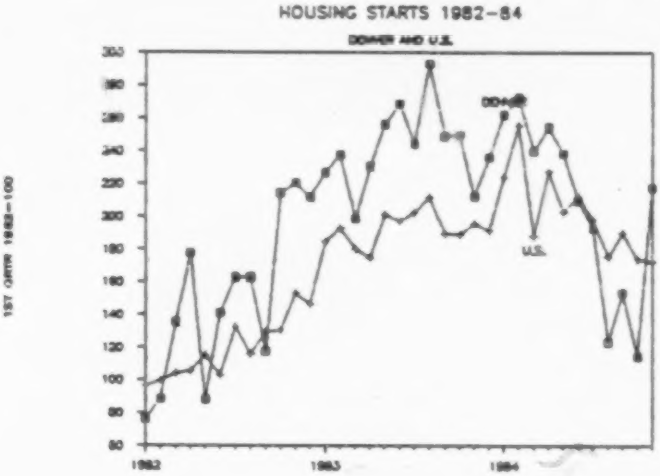
Chart 2



Preliminary November and December data suggest a renewal of faster growth. Despite the layoffs at state electronics firms, employment by place of work registered a gain of 18,000 from October to December on a seasonally adjusted basis. The state unemployment rate fell in November. In part the strength in November is a reflection of weakness in October caused by the mid-month blizzard which occurred during the week when employment and unemployment data were estimated.

Housing activity, shown in Chart 3, shows the impact of increases in interest rates in the first half of 1984. Between February and July mortgage commitment rates rose nearly 1.5%, and homebuilding fell sharply in both Colorado and the nation. Subsequent declines in rates have now begun to affect housing permits, and further improvement is anticipated in the coming months. The November data also suggest future gains in housing. November Denver housing permits were twice the October level on a seasonally adjusted basis, and the highest since May.

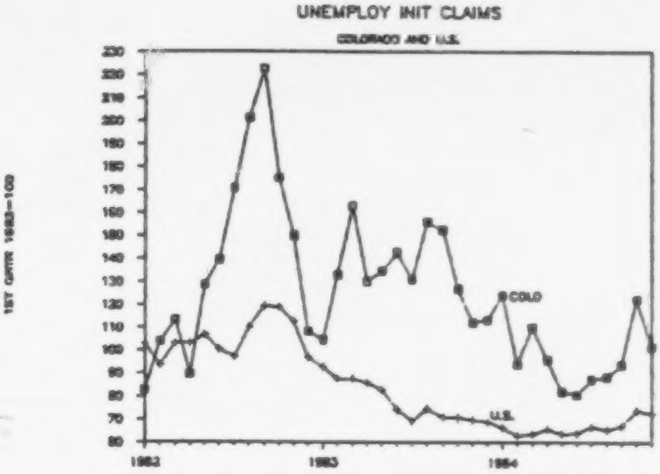
Chart 3



Colorado sales data also slowed signs of slowing. The state rebound in sales occurred somewhat later than that of the nation and continued after national sales slowed. However, sales tax collections based on October and November sales fell somewhat from the previous months. The last three months data showed only a slight gain on a seasonally adjusted deflated basis from the previous three months. Nationally retail sales have been sluggish throughout the summer and early fall, although the November figure showed a solid gain.

With sluggish gains in employment and output, labor markets softened. Initial claims for unemployment insurance, shown in Chart 4 below, rose in Colorado as in the U.S.. The Colorado series registered a sharp increase in October due to a mid-month snowstorm and layoffs at Storage Technology and other electronics firms. The state unemployment rate also edged upward in October, although it improved somewhat in November and December.

Chart 4



The states economic recovery has been an uneven one. The greatest gains have been registered along the front range. Colorado Springs and Fort Collins showed the fastest growth. Both areas benefitted from a reasonably strong recovery in electronics and defense based manufacturing. Colorado Springs growth was spurred by a building boom inspired by the proposed location in that area of the Combined Space Operations Center(CSOC). Metropolitan Denver lagged the rest of the northern front range somewhat, but still experienced a healthy recovery. Much of the Rocky Mountain Region's oil and gas exploration is based in Denver, and the energy bust affected the Denver area's growth. An excess supply of office buildings both downtown and in the southeast part of the metropolitan area has slowed, but not halted, nonresidential construction.

By contrast areas of the state depending upon mining and agriculture languished. The Grand Junction area has yet to recovery from the reduction in oil and gas exploration and the abandonment of plans for oil shale plants. Molybdenum mining remains depressed, and the demand for Colorado coal is sluggish. Rural communities in the eastern plains suffer from the general weakness in agriculture. Pueblo's growth has been sluggish since CF&I Steel reduced its workforce.

TABLE 1
MONTHLY INDICATORS

	HIGHS & LOWS SINCE JAN '82		MONTHLY SINCE MAR '84-SEASONALLY ADJUSTED								
	LOW	HIGH	1984:3	1984:4	1984:5	1984:6	1984:7	1984:8	1984:9	1984:10	1984:11
EMPLOYMENT											
COLORADO(THOU)	1307.6	1378.5	1353.4	1357.2	1359.9	1356.7	1359.5	1363.2	1362.4	1366.8	1378.5
U.S.(MIL)	88.646	95.453	93.06	93.45	93.79	94.14	94.35	94.52	94.81	95.15	95.45
MANUFAC. EMPLOY.											
COLORADO(THOU)	176.9	190.8	185.9	187	187.1	187.8	188.5	189.6	189.9	190	190.8
U.S.(MIL)	18.041	19.725	19.466	19.53	19.57	19.629	19.696	19.725	19.616	19.681	19.704
SALES INDICATORS											
COLORADO											
SALES TAX($MIL-ANN.RT)	527	684	635	635	670	674	643	673	684	659	668
SALES TAX(DEFLATED)	179	218	206	205	216	217	207	215	218	209	212
U.S. RTL SLS($MIL/MO)	86.468	110.35	103.87	107.51	108.24	109.32	107.44	106.61	108.24	108.40	110.35
RETL SLS($67MIL/MO)	30.340	35.254	33.77	34.79	34.96	35.25	34.55	34.12	34.53	34.45	35.00
HOUSING											
DENVER HS PMTS(ANN RT)	9972	38316	31368	33252	31212	27408	25236	16128	20112	14988	28437
U.S. STARTS(MIL-ANN RT)	0.853	2.262	1.662	2.015	1.794	1.877	1.754	1.554	1.683	1.538	1.528
UNEMPLOYMENT											
COLO-INIT CLAIMS/WEEKLY	2663	7361	3627	3166	2711	2663	2884	2921	3091	4036	3350
U.S.-INIT CL(THOU/WK)	345	653	348	360	348	350	365	358	368	405	397

Sources:State of Colorado,Departments of Revenue and Employment;Data Resources, Inc.; CBEF

COLORADO SHORT TERM OUTLOOK

The Colorado short term forecast is summarized in tables 2 & 3. Among the highlights of the state outlook are:

*The state economy rebounds promptly from the sluggishness of the past two quarters.

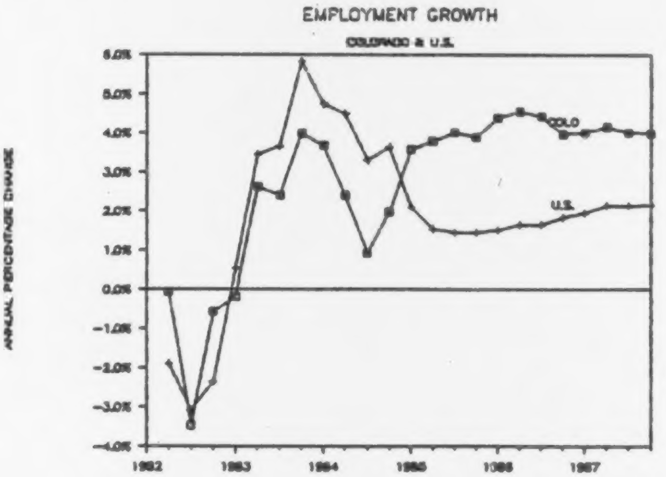
*Employment growth over the forecast period averages between 3 and 4 percent per year. This is stronger than the past several quarters but below the average growth over the decade of the 1970's.

*Sales gains about keep pace with income increases. The outlook calls for neither a boom nor a collapse.

*Homebuilding is expected to recover in the spring of 1985.

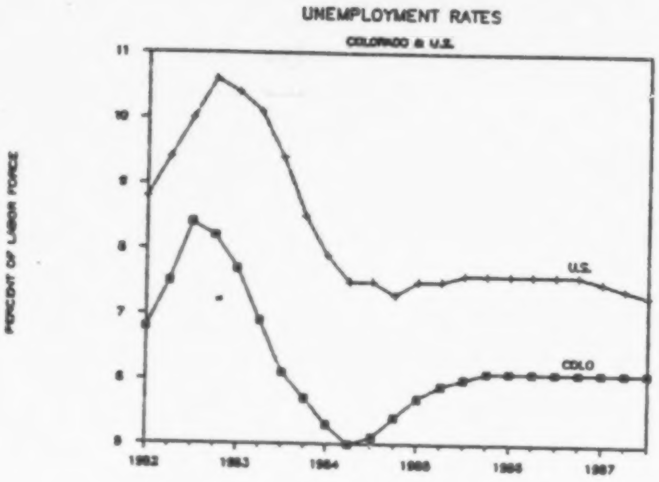
Total Colorado nonagricultural wage and salary employment, shown in Chart 5, rebounds after a sluggish performance in the third quarter. Over most of the past three years Colorado employment has, untypically, grown more slowly than the nation. The forecast calls for return to a more normal pattern relative to the nation. The rebound in Colorado employment gains is explained by several factors. First, it is likely that data revisions will show a somewhat stronger performance in 1984 and late 1983 than currently available data. In addition, the expected housing recovery in mid 1985 will give a greater impetus to the Colorado economy than it will to the nation. Finally, the state's manufacturing industry will grow faster over the next eighteen months than over the past eighteen months.

Chart 5



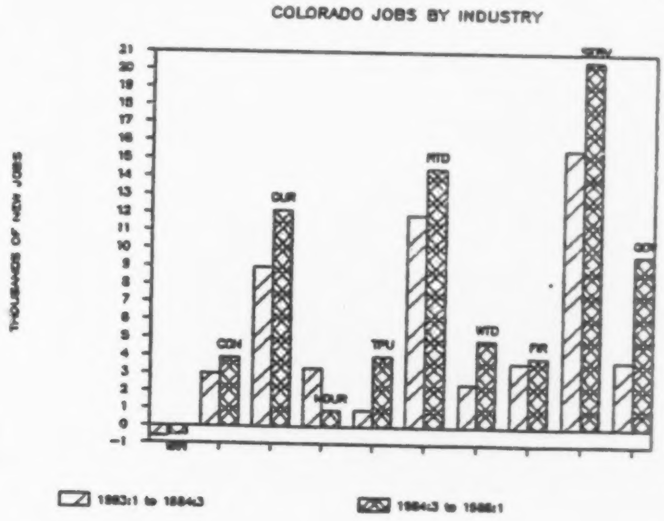
Unemployment in Colorado, which ticked upward in the fall will rise somewhat over the forecast period. As Chart 6 shows, both state and U.S. unemployment rates reached their troughs in the middle of 1984 and will increase as economic growth slows. The Colorado jobless rate rises from the mid-year level of 5% of the labor force to just under 6% by the end of the forecast period.

Chart 6



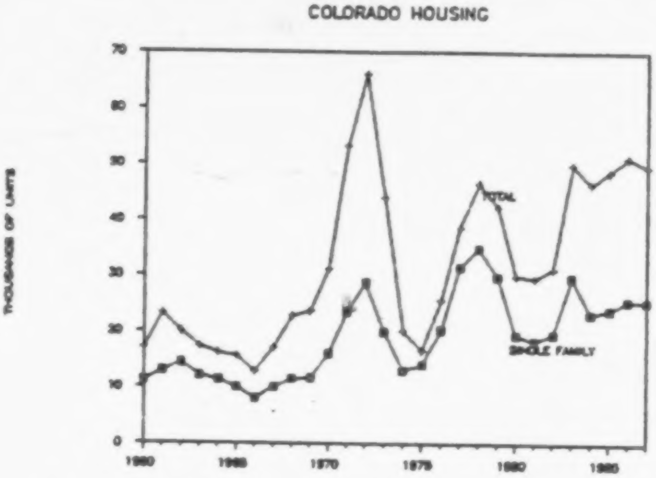
As measured by new jobs, the next year and a half is expected to be somewhat stronger for Colorado than the past 18 months. The state added 54,000 new jobs over the six quarters ending in the third quarter of 1984. Over the next six quarters an additional 73,000 jobs are expected. By contrast U.S. employment grew by 6.5 million over the last 6 quarters, but only 2 million new jobs are anticipated in the next 6 quarters. Chart 7 shows the breakdown of Colorado net new jobs by industry. The greatest improvement in performance is expected in durable manufacturing, all trade, services and government. Nondurable manufacturing will add fewer jobs, while mining loses jobs over both periods.

Chart 7



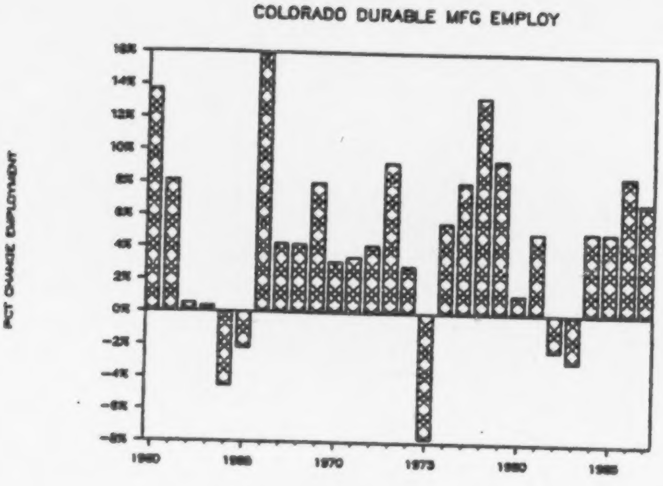
Homebuilding is expected to respond to lower interest rates and continued gains in household formation with new building at rates of 40,000 to 50,000 units per year. As Chart 8 shows, such a performance will be stronger than all but the boom years of the early 1970's and the late 1970's. The strength of multi family housing projected here may not be realized. Both apartment building and second home demand are sensitive to changes in tax laws which may be implemented next year. The forecast also assumes continued strong demand for single family homes, i.e. that the current excess of homes on the market is a temporary condition which will be eliminated as interest rates fall.

Chart 8



Continued vigor in durable manufacturing is one of the keys to the reasonably optimistic forecast projected here. This forecast is based on assumptions of some strength in capital spending, a weaker dollar, and desirability of Colorado as a location for new plants and expansions. Chart 9 shows historic and projected growth in Colorado durable manufacturing employment. The magnitude of projected growth falls short of that experienced in the late 1970's but represents a sizable improvement over the 1980-83 period. This forecast is based on the assessments that recent difficulties in the state's electronics industry reflect situations particular to the specific firms or markets involved rather than a general weakness in the industry for Colorado. Storage Technology Corporation, with corporate headquarters and major manufacturing facilities in Boulder County has been plagued by inability to compete with IBM in the disk drive market. Diversification efforts have been unsuccessful, and in October 1984 Storage Tek filed for Chapter 11 bankruptcy, the largest computer industry bankruptcy filing so far. Although the firm continues to operate, it has so far terminated some 4,000 employees in Colorado.

Chart 9



The retail sales forecast is summarized in Charts 10 & 11 below. Sales growth is expected to be slightly greater than at the national level through the next three years, but somewhat below 1984 gains. The 1984 gain would have been somewhat higher without some data problems in the first quarter.

The forecast assumes that the strength in Colorado sales, which appeared late the late spring, continues into 1985 despite weakening in the fall. DRI recently analyzed growth in retail sales by region through the recovery. The mountain region, of which Colorado is the largest state in terms of economic activity, showed below average growth from the beginning of recovery in October 1982 through June 1984. Through this period sales growth in the mountain states was among the slowest of any region in the nation. However, more recent gains have extremely strong. Growth for the entire recovery period in the mountain region is among the fastest in the nation.

Chart 10

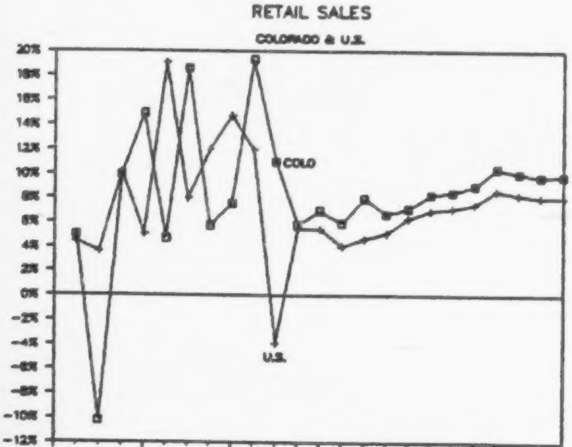
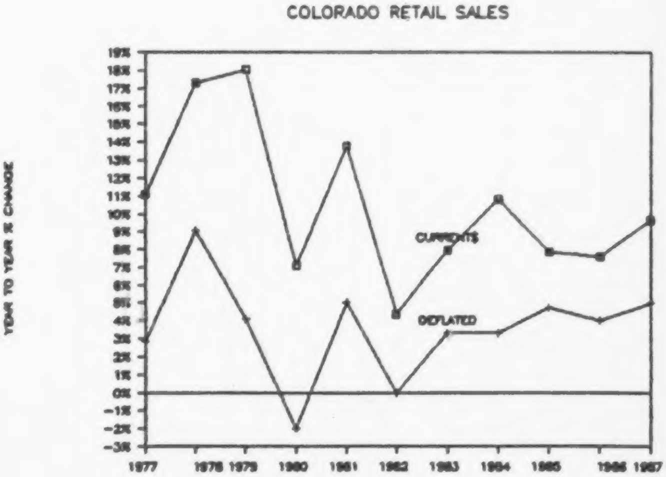


Chart 11



The projected recovery in the state economy falls short of that which occurred in the late 1970's. Such an outcome is hardly surprising, since the current period lacks the stimulus from energy and electronics which fueled the earlier expansion. While the next three years will be prosperous, they will fall somewhat short of the booms of either the early or late 1970's. Charts 12 & 13 below contrast growth in the current recovery with that of the late 70's.

With a more sluggish economy, the large budget surpluses which the state and many local governments enjoyed in the late 1970's are not expected to return. The state legislature, which is dominated by conservative Republicans, is now considering a sizable tax increase to fund education, capital improvements and to restore trust funds which were drawn upon during fiscal 1983 and 1984.

Chart 12

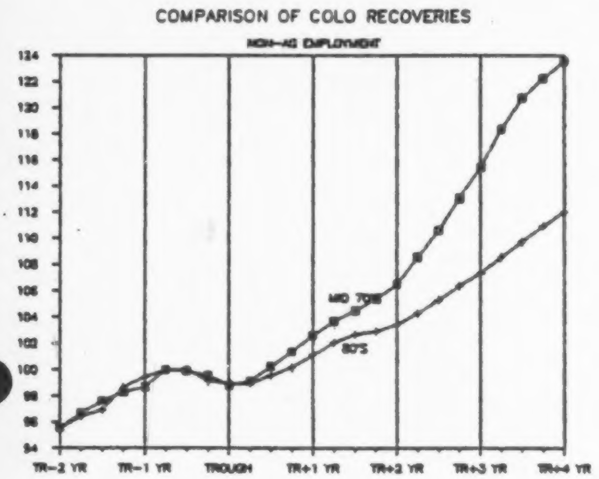


Chart 13

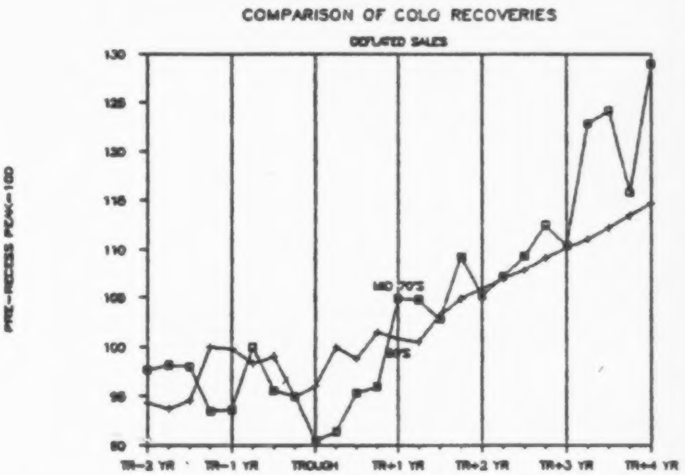


TABLE 2
KEY COLORADO VARIABLES
SEASONALLY ADJUSTED AT ANNUAL RATES

	QUARTERLY						ANNUAL					
	1984:3	1984:4	1985:1	1985:2	1985:3	1985:4	1982	1983	1984	1985	1986	1987
INCOMES($BILLIONS)												
PERSONAL INCOME	44.40	45.24	46.09	46.95	47.88	48.80	37.58	40.09	43.87	47.43	51.67	56.97
PCT CH.	9.3	7.9	7.6	7.7	8.1	7.9	10.1	6.7	9.4	8.1	8.9	10.3
PERS. INC.($72)	20.04	20.25	20.45	20.67	20.91	21.12	18.24	18.77	19.89	20.79	21.82	23.03
PCT CH.	4.8	4.2	4.1	4.3	4.7	4.2	4.0	2.9	6.0	4.5	4.9	5.6
WAGE & SALARIES	27.87	28.28	28.73	29.22	29.77	30.32	24.16	25.35	27.53	29.51	32.08	35.30
PCT CH.	7.9	6.0	6.5	7.0	7.8	7.6	9.9	4.9	8.6	7.2	8.7	10.0
UNEMPLOYMENT,EARNINGS & POPULATION												
NON-AG. EMPLOYMENT(THOU)	1,361.8	1,368.5	1,380.6	1,393.5	1,407.3	1,420.8	1,316.6	1,322.4	1,359.8	1,400.5	1,459.8	1,520.1
PCT CH.	1.0	2.0	3.6	3.8	4.0	3.9	1.7	0.4	2.8	3.0	4.2	4.1
UNEMP. RATE	5.1	5.4	5.7	5.9	6.0	6.1	7.7	6.6	5.2	5.9	6.1	6.1
HRLY EARN MFG	9.42	9.55	9.63	9.72	9.81	9.90	8.63	8.97	9.37	9.76	10.17	10.69
PCT CH.	5.1	5.4	3.7	3.6	3.7	3.8	4.3	4.0	4.5	4.2	4.2	5.1
POPULATION(MIL)	3.23	3.25	3.27	3.29	3.30	3.32	3.08	3.15	3.22	3.29	3.37	3.45
PCT CH.	2.1	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.3	2.4	2.4
SALES AND ITS DETERMINANTS												
DISP INC($BIL-72)	17.14	17.30	17.50	17.68	17.88	18.05	15.39	16.00	17.02	17.78	18.63	19.64
PCT CH.	4.6	3.7	4.8	4.2	4.4	3.9	4.3	4.0	6.3	4.5	4.8	5.5
RETL SLS($MIL-67)	7.834	7,907	7,986	8,050	8,149	8,222	7,248	7,487	7,736	8,102	8,428	8,848
PCT CH.	7.1	3.8	4.1	3.3	5.0	3.6	0.0	3.3	3.3	4.7	4.0	5.0
RETL SLS($MIL)	24,034	24,377	24,792	25,154	25,644	26,061	19,699	21,257	23,557	25,412	27,344	29,981
PCT CH.	11.0	5.8	7.0	6.0	8.0	6.7	4.4	7.9	10.8	7.9	7.6	9.6
SALES/DISP INC	0.633	0.631	0.629	0.626	0.626	0.625	0.621	0.622	0.628	0.627	0.620	0.617
CONSTRUCTION VARIABLES												
MORTGAGE COMM($MIL)	725	697	715	732	753	771	346	524	749	743	795	816
S.F. HOUSING PMTS(THOU)	17.9	22.6	22.4	23.9	24.7	25.2	19.6	29.7	23.3	24.0	25.6	25.4
TOT HOUSING PMTS(THOU)	33.2	43.6	44.5	48.0	50.7	51.7	31.2	50.0	46.4	48.7	51.2	49.6
NON RES CONTR($MIL)	1,857	1,794	1,790	1,787	1,784	1,812	1,637	1,614	1,736	1,793	2,048	2,310
PCT CH.	-14.9	-12.7	-0.9	-0.8	-0.6	6.5	-13.2	-1.4	7.6	3.3	14.2	12.8
MINING AND AGRICULTURE												
CROP SALES($MIL)	1,022	1,421	855	747	967	1,374	1,038	927	1,010	986	1,001	1,004
LVSTK SALES($MIL)	2,158	2,285	2,184	2,299	2,210	2,289	2,014	2,000	2,096	2,246	2,212	2,574
RIG-COUNT-RKY MTN	343	321	329	370	388	388	398	278	337	369	404	469

SOURCES:COLORADO DEPARTMENT OF LABOR AND EMPLOYMENT, F.W.DODGE INC.,
TOPEKA FHLB,DATA RESOURCES INC.,CBEF

TABLE 3
COLORADO EMPLOYMENT
(THOUSANDS)

	1984:3	1984:4	1985:1	1985:2	1985:3	1985:4	1982	1983	1984	1985	1986	1987
MINING	36.8	37.0	36.4	36.0	36.3	36.1	42.4	37.0	37.2	36.2	37.3	39.1
%CH	-8.0	2.2	-5.7	-4.3	2.6	-1.3	-2.3	-12.6	0.4	-2.6	2.9	5.0
CONSTRUCTION	84.6	82.8	84.2	85.2	86.1	86.9	82.9	81.6	84.9	85.6	91.6	97.0
%CH	-7.2	-8.4	7.2	4.6	4.3	4.0	7.0	-1.6	4.0	0.8	7.1	5.9
DURABLE MFG.	123.3	123.5	125.5	127.1	129.6	131.8	119.8	116.3	122.3	128.5	139.5	149.2
%CH	4.3	0.6	6.6	5.3	8.0	6.9	-2.2	-2.9	5.2	5.0	8.6	6.9
NON-DUR. MFG.	66.1	66.7	66.7	66.7	66.8	66.9	63.6	63.7	65.8	66.8	67.5	69.3
%CH	3.1	4.0	-0.5	0.4	0.6	0.6	-0.3	0.2	3.4	1.5	1.0	2.7
TRANS & P.U.	85.3	85.9	86.6	87.5	88.2	88.9	85.4	84.1	85.4	87.8	90.3	93.1
%CH	-0.9	2.9	3.1	4.4	3.2	3.1	3.7	-1.6	1.6	2.8	2.9	3.1
WHSL TRADE	79.2	79.7	79.9	80.9	82.0	83.1	78.7	77.8	79.4	81.5	85.7	89.5
%CH	-1.9	2.5	1.2	5.2	5.5	5.2	-0.2	-1.1	2.0	2.6	5.2	4.5
RETL TRADE	255.5	257.1	260.4	263.3	265.9	268.0	241.7	246.6	254.5	264.4	273.2	282.3
%CH	2.7	2.5	5.3	4.6	3.9	3.2	2.6	2.0	3.2	3.9	3.3	3.3
F.I.R.E.	88.4	88.7	89.2	89.4	90.1	91.3	83.5	86.0	87.9	90.0	93.9	97.5
%CH	3.6	1.4	2.2	1.0	3.4	5.4	4.0	2.9	2.3	2.3	4.3	3.8
SERVICES	298.1	300.9	303.8	307.9	311.4	315.1	280.0	287.4	298.0	309.6	324.6	342.1
%CH	1.6	3.9	3.9	5.5	4.7	4.8	4.0	2.6	3.7	3.9	4.9	5.4
GOVERNMENT	244.6	246.2	247.9	249.4	250.9	252.7	238.6	241.9	244.3	250.2	256.2	261.1
%CH	1.3	2.7	2.8	2.4	2.4	2.9	-1.3	1.4	1.0	2.4	2.4	1.9
TOTAL	1,361.8	1.368.5	1,380.6	1,393.5	1,407.3	1,420.8	1.316.6	1,322.4	1.359.8	1,400.5	1,459.8	1.520.1
%CH	1.0	2.0	3.6	3.8	4.0	3.9	1.7	0.4	2.8	3.0	4.2	4.1
U.S. TOTAL	94.6	95.4	95.9	96.3	96.6	97.0	89.6	90.1	94.1	96.4	98.0	99.9
%CH	3.3	3.6	2.1	1.6	1.5	1.5	-1.7	0.6	4.4	2.5	1.6	2.0

SOURCES:DATA RESOURCES, INC. ;CBEF

Among the regions of the state, economic strength will be concentrated in the front range area. The Denver outlook parallels that of the state as a whole, while the Colorado Springs grows somewhat faster. Areas of strength in Denver include durable manufacturing, construction and wholesale trade. Despite some evidence of overbuilding in multiple family housing, Colorado Springs construction activity remains strong. Electronics manufacturing also is expected to register further gains. The outlook for the mining and agriculture based areas of the state remains bleak.

COLORADO LONG TERM OUTLOOK

The 25 year outlook for the state calls for continued strength in durable manufacturing, trade and services. Denver should remain a major regional center for finance, transportation and other services. The forecast is on DRI's October 1984 long term trend forecast.

In addition to the national outlook, certain assumptions about the behavior of the Colorado economy are explicitly or implicitly incorporated into the forecast. These critical assumptions are outlined below:

* No major new developments occur in the state's resource industries. The forecast of relatively little growth in mining employment assumes no major coal or metal mining activity and no substantial oil shale development.

* Fertility rates are projected at near replacement level. Death rates remain stable.

* Labor force participation and household formation rates continue to increase after correcting for changes in the age mix of the population, but at much slower rates than during the 1960s and 1970s.

* The relationship between labor force growth and migration remains as it was during the 1960s and 1970s. This means that sufficient migration will occur to meet labor force needs, although tighter labor markets will increase wage costs.

* Colorado's competitive advantages in manufacturing will remain but will diminish somewhat over the forecast period. The manufacturing forecast calls for Colorado to maintain or increase its share of regional activity in most manufacturing industries. This means that Colorado will capture new manufacturing jobs which in the past would have gone to more expensive and congested regions in southern California.

* No new major aerospace or defense activity is projected for the state.

The Colorado long term forecast,summarized in Table 4 projects no future booms comparable to the building, electronics or energy booms of the 1970's and early 1980's. However, the outlook is a relatively favorable one. As the state economy emerges from the 1981-82 recession and the energy slowdown, growth is expected to resume at rates above those of the U.S.. The margin between state and national growth will narrow though most of the period as Colorado's cost and other advantages diminish.(See Chart 16 below) Employment growth averaged over 5% in the 1970's and is projected to fall to 2.5% by the end of the century. Employment growth accelerates slightly in the early 2000's stimulated by a minor housing boom as the current baby boom generation reaches adulthood. At the national level, the annual growth in the same statistic falls from 2.5% in the 1970's to below 1% in the 21st century.

Chart 16

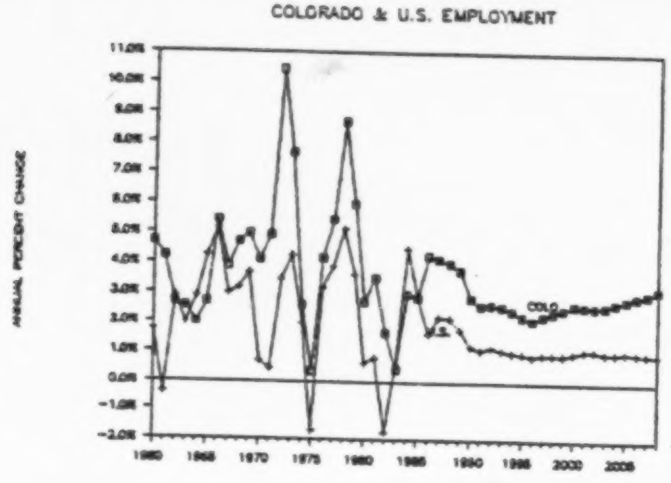
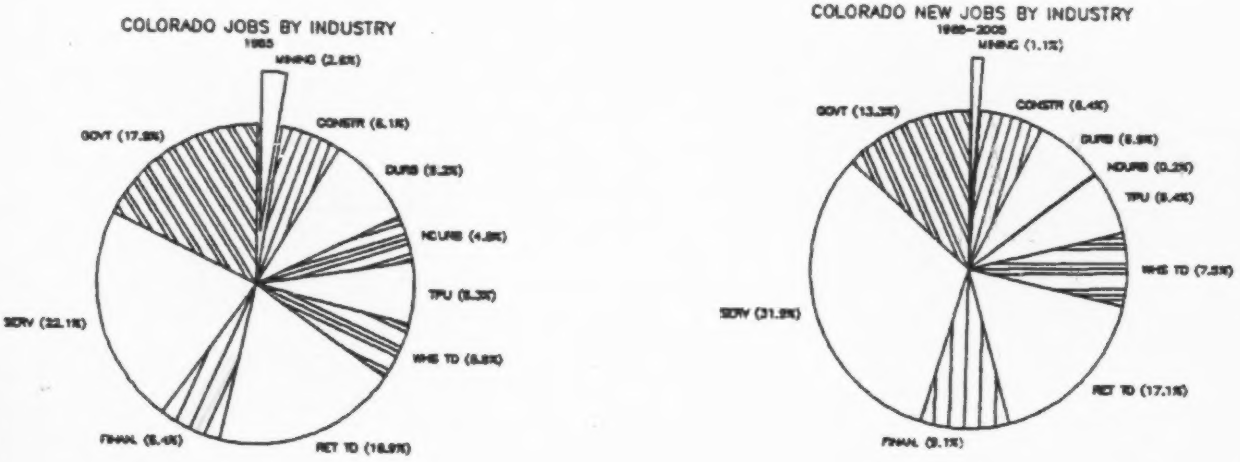


Chart 17 shows the industrial makeup of the new jobs. The left side of the chart shows jobs in 1985 by industry while the right side shows the distribution of net additions to the work force. The projections suggest a continuing shift toward a services oriented economy. Services, which range from laundries to accounting firms, will make up an even greater share of the new jobs than they do of the current jobs. On the other hand, mining and nondurable manufacturing account for very few of the new jobs. The remaining sectors' shares of jobs do not change much over the forecast period.

Chart 17

COLORADO JOB MIX BY INDUSTRY
1985 AND NEW JOBS-1985 TO 2005



The forecast calls for continuing relatively rapid growth in manufacturing employment although the rate of increase falls from the pace of the 1970's. The strong growth in durable manufacturing in the late 1980's is largely a consequence of the short term forecast, and will probably be somewhat lower when the new values are incorporated. That period aside, the outlook is for continual slowing in the growth of new manufacturing jobs. However, Colorado durable manufacturing employment growth will exceed that of the nation by 1% per year. The greatest gains will be in the electrical and nonelectrical machinery, transportation equipment and instrument sectors. These industries include most of the manufacturing activity usually described as "high tech".

The DRI forecast of relatively modest increases in energy prices over the next 25 years will mean a period of limited growth for oil and gas exploration and coal production in Colorado. Employment in metal mining remains stable. Mining employment for the state, which increased by 17,000 during the energy boom period of 1975-80, is projected to gain only 11,000 jobs between 1985 and 2005. Agriculture shows little real growth and declines as a share of overall state activity.

The long term outlook for residential construction in the state is determined by demographic factors, in particular the number of persons and families moving to Colorado and the number of young people forming households. Homebuilding is expected to remain relatively strong throughout most of the 1980's in response to the high rate of household formation. This pattern parallels a similar pattern at the national level. In the 1990's single family home demand drops as the number of persons reaching the age of family formation falls echoing the decline in the birth rates in the late 1960's. Between 1984 and 1990 the number of new units in the state averages 47,000 per year, but falls to around 30,000 by the late 1990's. Thereafter housing activity increases again due to increased household formation as the babies born in the late 1970's and 1980's reach adulthood.

Labor force growth in Colorado slows from 5% per year in the 1970's to 2.5% by the end of the forecast period. This slowing occurs despite continued high rates of migration in to the state because the proportion of the population of working age declines. While labor force growth in the 1970's was fueled by the baby boom generation reaching working age, lower birth rates after 1960 will mean slower labor force growth after 1980. The change in the age mix of the population will mean that higher rates of migration than in the 1960's and 1970's will be necessary to meet the projected labor force needs even though employment growth is expected to be slower. Significant tightening in the state labor market is forecast, with Colorado unemployment rates falling about 1% from their present levels.

The effects of the changing age mix of the population on participation and migration will mean that labor force gains will slow. The aging labor force means that the rate of employment growth forecast in the control forecast will require a sizable increase in the absolute number of migrants to the state from the that experienced in the 1970's. The aging of the pool of potential migrants will mean that such migrants will be harder to attract. It has been suggested that demographic factors described will limit Colorado's economic gains over the next 25 years. Such a conclusion should be tentative in light of the following considerations:

1)It is based on a continuation of migration and labor force participation trends. The 1970's saw substantial changes in labor force behavior, and further changes are likely in the future. For example substantially higher participation rates by women over 45 and both men and women over 65 would cause faster growth in the Colorado labor force without migration.

2)Labor force needs could be met in other ways. For example an increase in foreign migration might provide a sizable pool of needed workers.

3)It is not unreasonable to expect that the absolute number of migrants into Colorado will increase with growth in state employment and population. Migration is related to economic, social or family contacts between people residing outside an area and those in the area. As the population and economy in an area grow, the number of migrants to an area should also increase. As pointed out above, the projected rate of net migration as a percentage of Colorado population is below that of the 1970's through most of the forecast period.

Population growth slows although it remains well above national growth rates. Migration to Colorado remains large, increasing in absolute numbers although declining as a share of state population. The number of net migrants to the state averaged 45,000 during the 1970's. By the end of the forecast period annual net migration to the state approaches 100,000 per year. As a share of the state population net migration drops from 1.7% per year during the 1970's to 1.3% per year during the early 1990's. Thereafter it rises again, reaching levels above those of the 1970's by the end of the forecast period.

Chart 18 highlights changes in the age mix of the population. Because of the relatively high rate of migration, Colorado's population ages more slowly than that of the nation. Still, the aging of the baby boom generation is evident. Younger age groups decline as a share of population while the proportion in the 25-44 and later 45-64 increases.

Chart 18

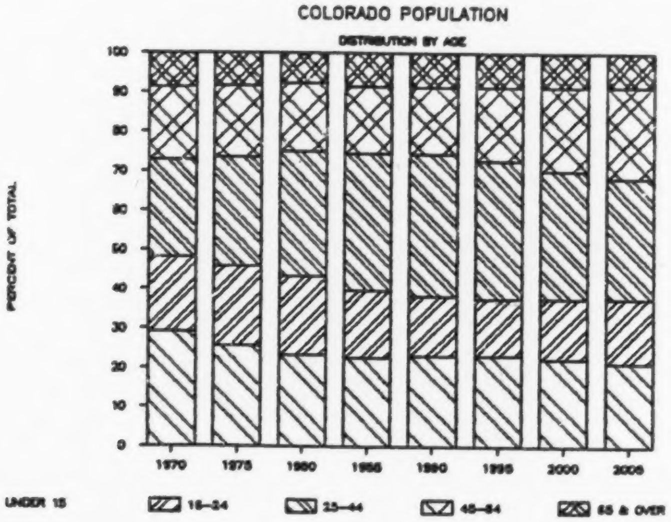


TABLE 4
LONG TERM CONTROL FORECAST-SUMMARY TABLE
KEY COLORADO VARIABLES

	1970	1975	1980	1985	1990	1995	2000	2005
INCOMES($BILLIONS)								
PERSONAL INCOME	8.64	15.47	29.15	47.43	77.99	129.28	214.38	360.48
ANN. %GROWTH		12.34	13.51	10.22	10.46	10.64	10.64	10.95
WAGES & SALARIES	5.71	9.97	19.13	29.51	48.29	79.09	129.19	213.69
ANN. %GROWTH		11.82	13.91	9.06	10.35	10.37	10.31	10.59
PERS. INC($72)	9.34	12.35	16.28	20.79	26.36	32.54	40.24	51.08
ANN. %GROWTH		5.73	5.69	5.01	4.86	4.30	4.34	4.89
EMPLOYMENT, LABOR FORCE AND EARNINGS								
LABOR FORCE (THOU)	922.6	1,162.1	1,502.1	1,762.8	1,996.5	2,237.4	2,535.4	2,885.4
ANN. %GROWTH		4.72	5.27	3.25	2.52	2.30	2.53	2.62
L.F. PART RT(% OF POP OVER 16)	60.1	62.1	67.4	70.7	72.3	73.0	73.6	73.5
UNEMPLOY. RATE	NA	5.3	5.9	5.9	5.0	4.8	5.2	5.1
URLY EARNINGS MFG($/HR)	3.50	5.03	7.63	9.76	13.10	18.92	27.15	38.76
. %GROWTH		7.49	8.69	5.06	6.05	7.64	7.48	7.38
COLO. NON-AG. W.& S. EMPLOYMENT(THOU)								
MINING	14.1	19.8	36.2	36.2	47.6	47.8	46.3	47.5
ANN. %GROWTH		6.96	12.83	0.00	5.62	0.07	-0.64	0.52
CONSTRUCTION	42.4	53.3	77.1	85.6	108.5	119.3	136.4	152.6
ANN. %GROWTH		4.71	7.65	2.11	4.86	1.92	2.72	2.26
DURABLE MFG	72.7	81.2	116.6	128.5	164.7	178.9	189.6	200.8
ANN. %GROWTH		2.24	7.50	1.96	5.09	1.66	1.17	1.15
NON-DURABLE MFG.	48.1	56.0	63.8	66.8	72.3	69.9	68.8	69.0
ANN. %GROWTH		3.10	2.66	0.91	1.60	-0.68	-0.31	0.07
TRANSP. & UTIL	49.6	59.4	79.3	87.8	103.6	117.9	134.5	154.9
ANN. %GROWTH		3.68	5.95	2.04	3.36	2.63	2.67	2.86
WHSL TRADE	47.1	55.8	75.2	81.5	99.8	117.1	134.7	159.2
ANN. %GROWTH		3.44	6.13	1.62	4.14	3.26	2.85	3.39
RETL TRADE	127.2	177.6	229.5	264.4	306.3	346.1	386.7	442.6
ANN. %GROWTH		6.91	5.27	2.87	2.99	2.47	2.24	2.74
FIRE	38.7	55.2	76.4	90.0	111.5	131.6	156.0	185.0
ANN. %GROWTH		7.35	6.73	3.33	4.37	3.38	3.45	3.47
SERVICES	132.9	188.6	253.5	309.6	390.9	459.4	539.9	641.2
ANN. %GROWTH		7.25	6.09	4.08	4.78	3.28	3.28	3.50
GOVERNMENT	177.2	216.6	243.6	250.2	281.6	318.8	350.4	388.9
ANN. %GROWTH		4.10	2.37	0.54	2.39	2.51	1.91	2.10
TOTAL-COLORADO	750.2	963.5	1,251.2	1,400.5	1,686.8	1,906.7	2,143.3	2,441.6
N. %GROWTH		5.13	5.36	2.28	3.79	2.48	2.37	2.64
L-U.S.(MIL)	70.9	76.9	90.4	96.9	106.0	111.8	117.2	123.5
ANN. %GROWTH		1.66	3.28	1.40	1.80	1.08	0.96	1.05

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TABLE 4 (CONT.)

	1970	1975	1980	1985	1990	1995	2000	2005
			POPULATION VARIABLES					
COLORADO POPULATION(MIL)	2.21	2.59	2.91	3.29	3.68	4.09	4.55	5.12
ANN. %GROWTH		3.19	2.36	2.54	2.23	2.13	2.19	2.35
BIRTHS	0.042	0.040	0.052	0.056	0.059	0.060	0.064	0.073
DEATHS	0.017	0.017	0.019	0.022	0.024	0.026	0.030	0.034
NET MIGRATION	0.036	0.019	0.037	0.041	0.041	0.053	0.066	0.086
POPULATION STRUCTURE-PCT OF TOTAL								
UNDER 5	8.4	7.8	7.5	8.3	8.3	7.7	6.9	6.8
5 TO 14	20.8	17.8	15.9	14.4	14.8	15.5	15.5	14.5
15 TO 24	19.0	20.2	19.9	17.2	15.3	14.6	15.3	16.4
25 TO 44	24.8	27.9	31.7	34.8	36.0	34.9	32.6	30.7
45 TO 64	18.4	18.0	17.3	16.8	17.0	18.6	21.1	23.2
65 AND OVER	8.5	8.3	8.6	8.5	8.7	8.7	8.6	8.4
			SALES AND ITS DETERMINANTS					
DISP INC($BIL-72)	8.01	10.70	13.75	17.78	22.21	27.17	33.44	42.21
ANN. %GROWTH		5.96	5.15	5.27	4.55	4.11	4.24	4.77
RETL SLS($MIL-67)	NA	NA	6,901	8,102	10,020	12,057	14,382	17,828
ANN. %GROWTH		NA	NA	3.26	4.34	3.77	3.59	4.39
RETL SLS($MIL)	NA	8,474	16,575	25,412	40,329	65,193	103,760	168,750
ANN. %GROWTH		NA	14.36	8.92	9.68	10.08	9.74	10.22
S/DISP INC	NA	0.632	0.673	0.627	0.614	0.604	0.582	0.566
			CONSTRUCTION VARIABLES					
HOUSEHOLDS(THOU)	685	863	1,057	1,266	1,448	1,628	1,828	2,075
ANN. %GROWTH		4.73	4.13	3.68	2.73	2.37	2.34	2.56
HOUSING STOCK(THOU)	747	991	1,172	1,398	1,670	1,865	2,045	2,259
ANN. %GROWTH		5.82	3.41	3.59	3.62	2.24	1.86	2.01
MORTEAGE RATE	8.325	8.952	13.017	13.085	10.730	10.142	9.968	9.875
S.F. HOUSING PMTS(THOU)	16.0	14.2	19.4	24.0	17.3	13.8	16.5	23.0
TOTAL HOUS PMTS(THOU)	31.1	16.7	30.0	48.7	35.9	29.6	32.1	43.0
			MINING AND AGRICULTURE					
CROP SALES($MIL)	268	601	1,023	1,004	1,312	1,757	2,353	3,115
LVSTK SALES($MIL)	941	1,318	2,211	2,364	2,359	3,169	4,244	5,618
RIG COUNT=-RKY MTNS	153	253	449	471	626	600	600	600

SOURCES:COLORADO DEPARTMENT OF LABOR AND EMPLOYMENT, F.W.DODGE INC.,
TOPEKA FHLB,DATA RESOURCES INC.,CBEF

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NEW MEXICO ECONOMIC REVIEW AND OUTLOOK

by

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and
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Bureau of Business and Economic Research
University of New Mexico
March 12, 1985

INTRODUCTION

The performance of the New Mexico economy during the 1970's and the early 1980's reflected a close link between the development of the state's mineral and natural resources and the growth of the State's economy. From 1973 to 1981 the boom in the energy and mineral sectors insulated the local economy from the recessionary trends of the natinal economy. This growth continued until 1982 when the collapse in important energy markets and the effects of the extended national recession were reflected in the state's poorest economic performance in 21 years.

Since 1983 the New Mexico economy has closely paralleled the expansion of the U.S. economy with a moderate economic recovery fueled by strong growth in real disposable income, increased defense spending and a budding electronics manufacturing base in the Albuquerque area. The New Mexico economy remains heavily dependent upon the government sector, but is transitioning from its reliance on mineral and energy extraction to a growing manufacturing, retail trade and services base.

This paper examines the recent economic performance of the New Mexico economy and presents a short-term outlook for the state's economy using the results of the New Mexico economic forecasting service, FOR-UNM, managed by the University of New Mexico's Bureau of Business and Economic Research. Focus will be on the key elements for the continued economic well being of the state including the prospects for the mining sector, the state's reliance on federal government expenditures and the emerging industrial base provided by new electronics manufacturers. Also examined in this paper is the emerging regional disparity in economic growth within the state. Rural areas dependent upon mining and agriculture have experienced weak economic growth, while the major urban areas in New Mexico are expanding rapidly driven by growing manufacturing, trade and services sectors.

A PROFILE OF THE NEW MEXICO ECONOMY

As a background for the review and outlook for the New Mexico economy, it is important to understand the basic economic structure of the New Mexico economy. This overview includes the type and magnitude of economic activity conducted within the state as illustrated by the composition of nonagricultural employment, population, the distribution of aggregate economic activity throughout the state and a brief review of state government finances.

Population Distribution of New Mexico

New Mexico, as the fifth largest state in land area, contains 121,335 square miles with a population of 1,424,000 people in 1984. This infers a population density of 11.7 persons per square mile, which is approximately one fourth of the national average of 57.9 persons per square mile. Table 1 compares the rate of growth of New Mexico and the Albuquerque MSA population to the U.S. for selected time period since 1960. Since 1970 population growth in New Mexico has been more than double the

TABLE 1

POPULATION TRENDS: 1960-1983
UNITED STATES, NEW MEXICO AND ALBUQUERQUE MSA

Year	U.S.	New Mexico	Albuquerque MSA
1960	179,232,175	951,023	263,500
1970	203,211,926	1,017,055	315,774
1980	226,545,805	1,303,143	419,700
1982	231,786,000	1,367,000	434,400
1983	233,981,000	1,399,000	442,300
1984	236,158,000	1,424,000	NA
COMPOUND AVERAGE ANNUAL GROWTH RATES			
1960-70	1.26%	0.67%	1.83%
1970-80	1.09%	2.51%	2.89%
1980-82	1.02%	2.15%	1.54%
1980-83	1.00%	2.21%	1.62%
1980-84	0.98%	2.10%	NA

NA Not Available

Source: U.S. Bureau of the Census

national rate reflecting higher birth rates here as well as strong economic migration trends. Over the last fourteen years New Mexico's population has increased 40 percent while the U.S. population grew only 16.2 percent.

The largest population centers of New Mexico, as indicated by Table 2, are Albuquerque, Santa Fe and Las Cruces. The three counties encompassing those cities--Bernalillo, Santa Fe and Dona Ana, respectively--comprise 45 percent of the total New Mexico population with the remaining 55 percent dispersed among the other 30 counties. Of those three counties, Bernalillo contains 32 percent of the population in New Mexico, a reflection of Albuquerque's relative importance to the state's economy.

Composition of Nonagricultural Employment

The figures in Table 3 illustrate the current employment profile in New Mexico, excluding agricultural employment. Traditionally, agricultural employment represents less than four percent of the total employment of New Mexico, with farm proprietor's income averaging less than two percent of total personal income for the state. In 1984 New Mexico total nonagricultural employment totaled 503,200.

The importance of the government sector to New Mexico can be clearly seen in Table 3. The government sector is the state's largest employer with 25.8 percent of the total work force compared to the national average of only 17.3 percent. Since 1970, however, New Mexico's reliance on government has

TABLE 2

POPULATION OF U.S., NEW MEXICO, AND FIVE LARGEST NEW MEXICO CITIES, (1970-1980)

	1970	1980	% Change 1970-1980
United States	203,302,031	226,545,805	11.4%
New Mexico	1,017,055	1,302,894	28.1%
Albuquerque	244,501	331,767	35.7%
Santa Fe	41,167	48,953	18.9%
Las Cruces	37,857	45,086	19.1%
Roswell	33,908	39,676	17.0%
Farmington	21,979	31,222	42.1%

Source: U.S. Bureau of the Census.

TABLE 3

NEW MEXICO AND U.S. NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT

	1970		1980		1984	
	No.	% Total	No.	% Total	No.	% Total
New Mexico (thousands)						
Total	292.6	100.0	465.4	100.0	503.2	100.0
Government	89.2	30.5	125.0	26.9	129.6	25.8
Trade	62.0	21.2	103.0	22.2	117.8	23.4
Services	53.0	18.1	91.8	19.7	107.1	21.3
Manufacturing	21.4	7.3	34.4	7.4	36.6	7.3
Transportation & Utilities	20.4	7.0	28.3	6.1	29.9	5.9
Construction	17.4	5.9	32.1	6.9	36.3	7.2
Mining	17.0	5.8	29.4	6.3	21.4	4.3
Finance, Insurance & Real Estate	12.2	4.2	21.1	4.5	24.5	4.9
United States (millions)						
Total	70.9	100.0	90.5	100.0	94.1	100.0
Government	12.6	17.8	16.2	17.9	16.0	17.3
Trade	15.0	21.2	20.4	22.5	21.8	23.2
Services	11.5	16.2	17.9	19.8	20.7	21.9
Manufacturing	19.4	27.4	20.3	22.4	19.6	20.8
Transportation & Utilities	4.5	6.3	5.1	5.6	5.2	5.5
Construction	3.6	5.1	4.4	4.9	4.3	4.6
Mining	0.6	0.8	1.0	1.1	1.0	1.1
Finance, Insurance & Real Estate	3.7	5.2	5.2	5.7	5.7	6.0

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1 New Mexico employment figures are in thousands and U.S. employment figures are in millions. Detail may not add to total due to rounding.

2 Excludes military.

3 Excludes private household workers.

Source: New Mexico Employment Security Department; Bureau of Labor Statistics; and U.S. Department of Labor

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declined somewhat in relative importance. Back in 1970, government accounted for 30.5 percent of all jobs. Not included in the government sector above, however, is the reporting of the private Sandia National Laboratory in Albuquerque, which employs approximately 7,000 people primarily under contract to the U.S. Department of Energy. These employees are currently reported in the services sector. Other important federal government activities in New Mexico include four major military installations and Los Alamos National Laboratories.

The large trade and services sectors employ 23.4 percent and 21.3 percent, respectively, of total nonagricultural employment in 1984. This roughly coincides with the national averages for the same sectors. Incorporated in these figures are relatively large amounts for tourism and recreation activities within the state including skiing, horse racing and numerous national parks and wilderness area experiences.

The construction sector accounts for 7.2 percent of employment in New Mexico compared to 4.6 percent at the national level. Construction's relative important to the New Mexico economy reflects the construction activity associated with above-average population growth and the current boom in multi-family housing and office building construction in New Mexico and Albuquerque.

Mining employment accounts for 4.3 percent of the New Mexico work force in 1984 as compared to only 1.1 percent nationally. However, the relative importance of mining to the New Mexico economy has shrunk in the last three years as over 10,000 jobs have been loss in this sector. In 1980 by comparision, mining accounted for 6.3 percent of total New Mexico nonagricultural employment. Job losses in the state's mining sector have been concentrated particularly in uranium, potash, copper and natural gas.

One notable feature of New Mexico's mining sector is its diversity. Within the state oil, natural gas, copper, coal, potash, uranium and molybdenum are all produced in significant quantities. With the exception of coal and oil production and exploration, most of New Mexico's extractive industries are severely depressed.

New Mexico has a relatively small manufacturing base, accounting for only 7.3 percent of total nonagricultural employment in 1984, compared to 21.9 percent nationally. While nationally manufacturing is decreasing in importance, in New Mexico manufacturing's share of employment has remained fairly constant since 1970. In recent years the Albuquerque area has been successful in attracting several new high tech firms including Sperry Flight Systems, Intel, Signetics, Honeywell, Ethicon and Monolithic Memories. Other major manufacturing firms in New Mexico include Levi Strauss, GTE Lenkurt, Digital Equipment, General Electric and Sparton Industries.

Regional Distribution of Employment and Economic Activity

Although New Mexico is a sparsely populated state, there are several local areas with large concentrations of people and services. Albuquerque is the largest of these areas with approximately one-third of the state's total employment located there.

Table 4 shows the dominance of Albuquerque in the economy of New Mexico. The structure of the Albuquerque economy is quite different from the rest of New Mexico. There is no mining activity in Albuquerque to speak of, but the city is much more dependent upon trade, services and manufacturing. In fact, approximately one-half of the state's employment in services, manufacturing and finance, insurance and real estate is located in the Albuquerque area. In contrast, the economy in areas outside of Albuquerque are much more dependent upon government and mining.

Several situational factors have encouraged the strong services and retail trade center role for Albuquerque, including its central location with a cross-roads of two major highways combined with New Mexico's only major international airport and the University of New Mexico. Albuquerque is also the home of both Kirtland Air Force Base, which supplies 19,360 jobs and $734,986,489 of local contracts and Sandia National Laboratories, a private contractor to the U.S. Department of Energy. At Kirtland AFB the Air Force conducts basic research on lasers and other activities associated with the so called "Star Wars" program. At Sandia Labs, in conjunction with Los Alamos National Laboratories located in Northern New Mexico, most of the nation's basic nuclear weapons research is conducted.

Santa Fe, in northern New Mexico, is the state capitol and the second largest city. Primary employment in Santa Fe is with the state government and a large tourist industry. Las Cruces in southern New Mexico is quite dependent upon both state and

TABLE 4

NONAGRICULTURAL EMPLOYMENT SECTOR, 1984
NEW MEXICO, ALBUQUERQUE MSA, REST OF NEW MEXICO
(in thousands)

Sector	New Mexico	Albuquerque	Outside Albuquerque MSA Rest of New Mexico
Trade	117.8	52.9	64.9
%Total	23.41%	25.41%	22.00%
Services	107.1	53.0	54.1
%Total	21.28%	25.46%	18.34%
Government	129.6	43.0	86.6
%Total	25.76%	20.65%	29.36%
Manufacturing	36.6	19.1	17.5
%Total	7.27%	9.17%	5.93%
Mining	21.4	0.3	21.1
%Total	4.25%	0.14%	7.15%
Construction	36.3	15.3	21.0
%Total	7.21%	7.35%	7.12%
T.C.U	29.9	12.2	17.7
%Total	5.94%	5.86%	6.00%
F.I.R.E.	24.5	12.5	12.0
%Total	4.87%	6.00%	4.07%
TOTAL	503.2	208.2	295.0

Source: New Mexico Employment Security Department.

federal government employment, but it also has a developing manufactuing base and a significant traditional agricultural economy. It is at a cross-roads of major interstate highways and is easily accessible from Texas and Arizona. Located near Las Cruces is the White Sands Missile Range and Holloman Air Force Base. White Sands Missile Range employes 9,122 and supplies $58,268,071 in military and civilian contracts to the local economy, with Holloman contributing 19,474 jobs and $38,253,663 in local contracts.

The rest of New Mexico employment and economic activities are divided evenly around the state, with oil and natural gas production and potash mining in south-eastern New Mexico and coal, uranium, oil and gas production in the north-western area of the state. These areas contain the fourth and fifth largest cities in the state, Roswell and Farmington, respectively.

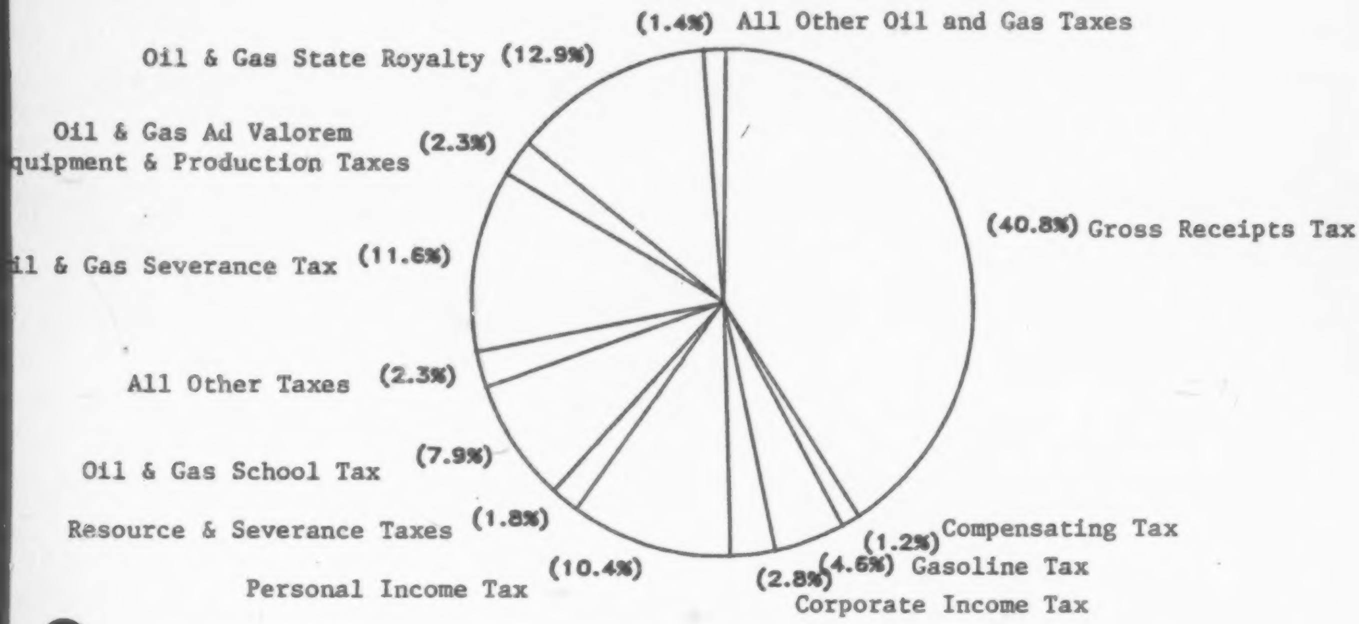
State Government Finance

During the fiscal year ending June 30, 1984 the State of New Mexico collected $1.59 billion from over 26 separate tax and tax related programs. The sources and uses of state tax revenues in FY 83-84 are illustrated in two pie charts in Table 5. The state gross receipts tax is the largest single source of state tax revenue (40.8 percent) followed closely by the 36.1 percent attributable to taxes of various kind on the oil and gas industry. Personal income taxes contributed 10.4 percent of the total, while the corporate income tax accounted for only 2.8 percent.

Table 5

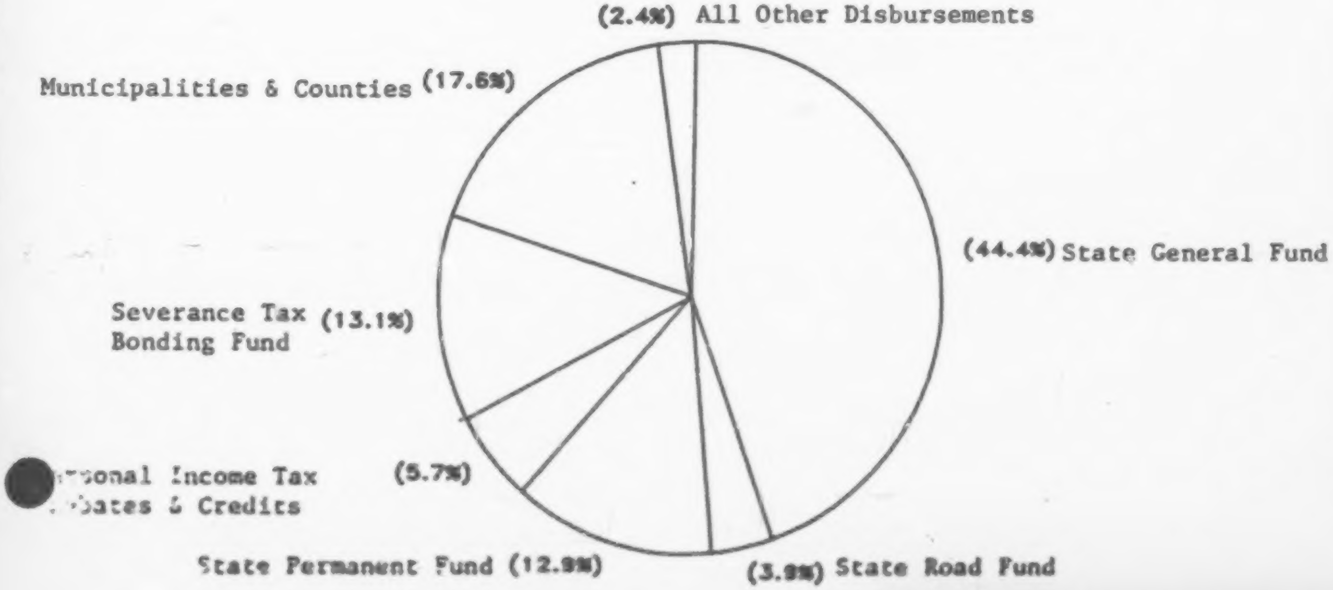
TOTAL STATE TAX RECEIPTS

72nd FISCAL YEAR, (1983–1984)



TOTAL STATE TAX DISBURSEMENTS

72nd FISCAL YEAR, (1983–1984)



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It should be noted that this $1.59 billion represents only "tax" sources of revenue and does not include sizable amounts of "non-tax" sources such as interest earnings on the state's two large permanent funds and federal royalty payments on mineral leases within the state. In FY 83-84 these two non-tax sources amounted to approximately $443 million and were disbursed to the state's general fund.

State tax collections are disbursed to several separate and distinct funds including the state general fund which finances the operations of state government, public schools, higher education and human services in New Mexico; the state road fund which pays for highway maintenance and construction; municipalities and counties representing the local portion of the New Mexico gross receipts tax collected by the state on behalf of local governments and the oil and gas ad valorem equipment and production tax; the state permanent fund which now amounts to approximately $2 billion and which receives certain designated taxes such as the oil and gas state royalty tax; and the severance tax bonding fund which provides for the debt service of the state's severance tax revenue bonds with any excess going to the state's severance tax permanent fund which now amounts to approximately $1 billion.

For the last two fiscal years the New Mexico general fund, which finances the basic functions of state government including public schools and higher education, has operated in a deficit position on a recurring basis. New Mexico, like most other states, is required to maintain a balanced budget. These deficits in the general fund have been covered out of sizable state reserves which were bolstered in FY 82-83 by a $259.8 million settlement with the federal government over payment of state gross receipt taxes by federal contractors within New Mexico. In FY 83-84 recurring general fund expenditures were $1,228.3 million while recurring revenues were only $1,188.3 million, leaving a $40 million deficit. In the current fiscal year recurring general fund expenditures are expected to be $1,328.8 million while recurring revenues are expected to be only $1,283.6 million, leaving another deficit of $45.2 million.

New Mexico state revenue growth has diminished in recent years due to a combination of factors including a large cut in personal income, property and gross receipts taxes in 1981, lower energy prices and production particularly for oil and natural gas, general weakness in the New Mexico economy, dramatic decreases in inflation rates which affected nominal collections of taxes, and declines in interest rates from their lofty peaks in the early 1980's which adversely affected the interest earnings on the state's permanent funds.

Over the last 14 years New Mexico state revenues have become particularly vulnerable to fluctuations in oil and natural gas activity and interest rates. Back in FY 71-72 New Mexico received 74.3 percent of general fund revenue from broad-based taxes such as gross receipts and income taxes. By FY 81-82 (year of a large tax cut) these same broad-based taxes accounted for only 42.0 percent of general fund revenue. During the same time period energy-based taxes on oil and gas grew in importance from 9.7 percent to 34.4 percent of general fund revenue. Interest earnings similarly increased in importance from 6.1 percent to 22.4 percent of general fund revenue. (See Table 6).

With the recent declines in energy prices and production in New Mexico as well as significant decreases in the level of interest rates, New Mexico state revenues have grown rather sluggishly. This has created a political crisis within the state as a democratic governor's call for broad-based tax increases to fund expansion in public schools and higher education have fallen on the deaf ears of a conservative republican led legislature which has rallied around a platform of no tax increases.

REVIEW OF THE NEW MEXICO ECONOMY IN 1984

Table 7 compares growth of total nonagricultural employment in New Mexico and the U.S. between 1960 and 1984. The 1960's was generally a period of below national average growth for the New Mexico economy. During the 1970's, fueled by a boom in energy extraction, New Mexico economy outpaced the U.S. economy. As the decade of the seventies closed, the New Mexico economy was moving more in concert with the U.S. economy, and this trend continued into the 1980's.

In 1984 the New Mexico economy experienced a significant economic recovery which dates back to mid-1983. New Mexico total nonagricultural employment increased a strong 4.9 percent, after increasing only 1.2 percent in 1983. (See Table 8). This was the state's best economic performance since 1978, a time when the state was still enjoying the benefits of the energy

TABLE 6

NEW MEXICO GENERAL FUND REVENUE SOURCES
(percentages)

	Fiscal Year			
	71-72	81-82	83-84	84-85*
Broad-based Taxes				
Gross Receipts & Selective	54.1%	35.2%	38.6%	40.2%
Income	20.2%	6.8%	9.9%	12.1%
TOTAL	74.3%	42.0%	48.5%	52.3%
Energy-based				
Severance Taxes[1]	3.5%	11.9%	11.9%	11.4%
Rents & Royalties [2]	6.2%	22.6%	14.9%	12.0%
TOTAL	9.7%	34.4%	26.7%	23.4%
Interest Earnings[3]	6.1%	21.2%	22.4%	22.1%

* Estimated by New Mexico Department of Finance and Administration.

Source: New Mexico Department of Finance and Administration.

1. Oil and Gas School Tax, Oil Conservation, Resource Excise and Natural Gas Processors.
2. Federal mineral leasing and Land Office income.
3. Permanent Fund, Severance Tax Fund and earnings on State balances.

Table 7

TOTAL NON-AGRICULTURAL EMPLOYMENT GROWTH RATES
N. M. VERSUS U. S., 1960–1984

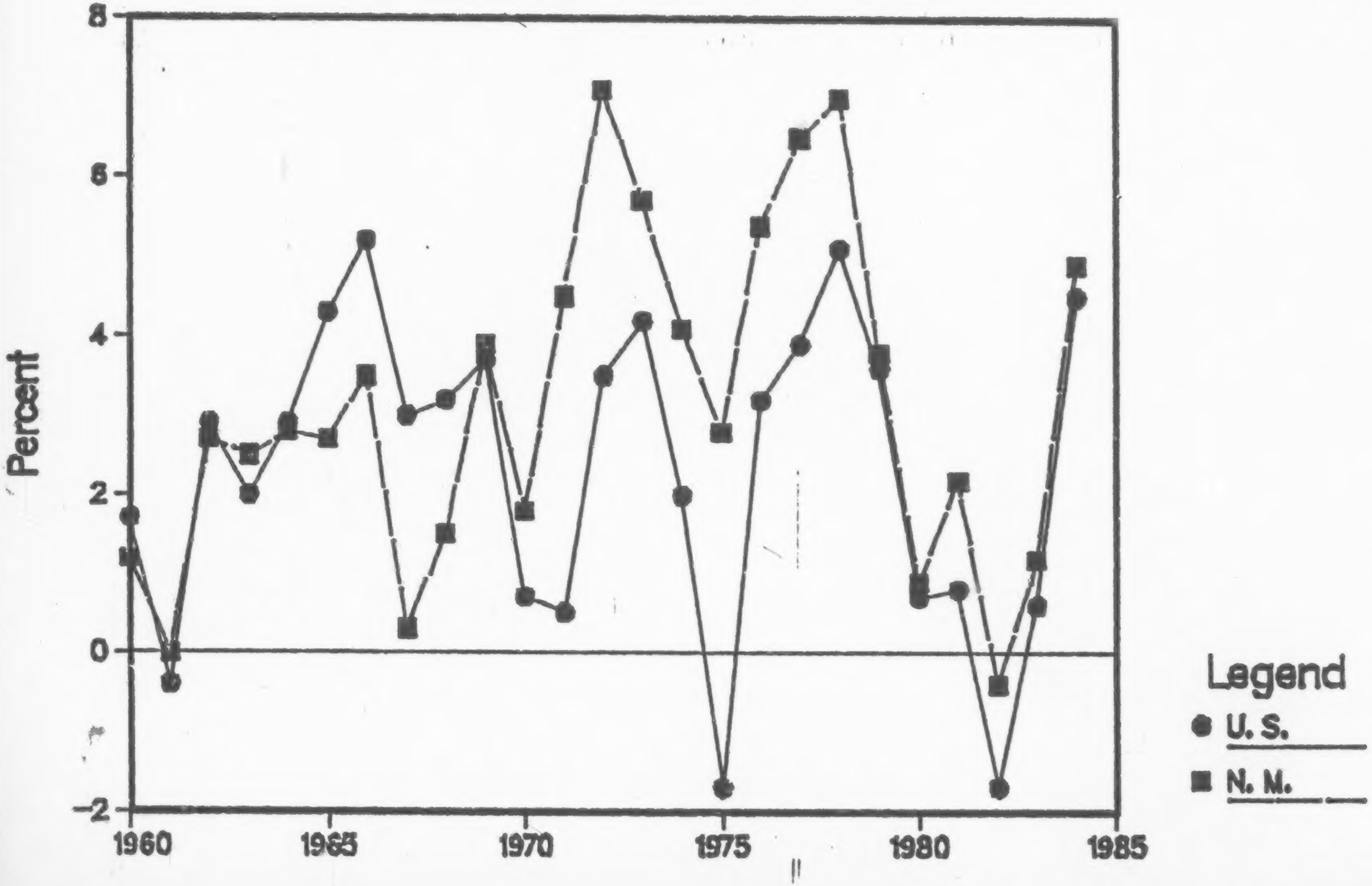
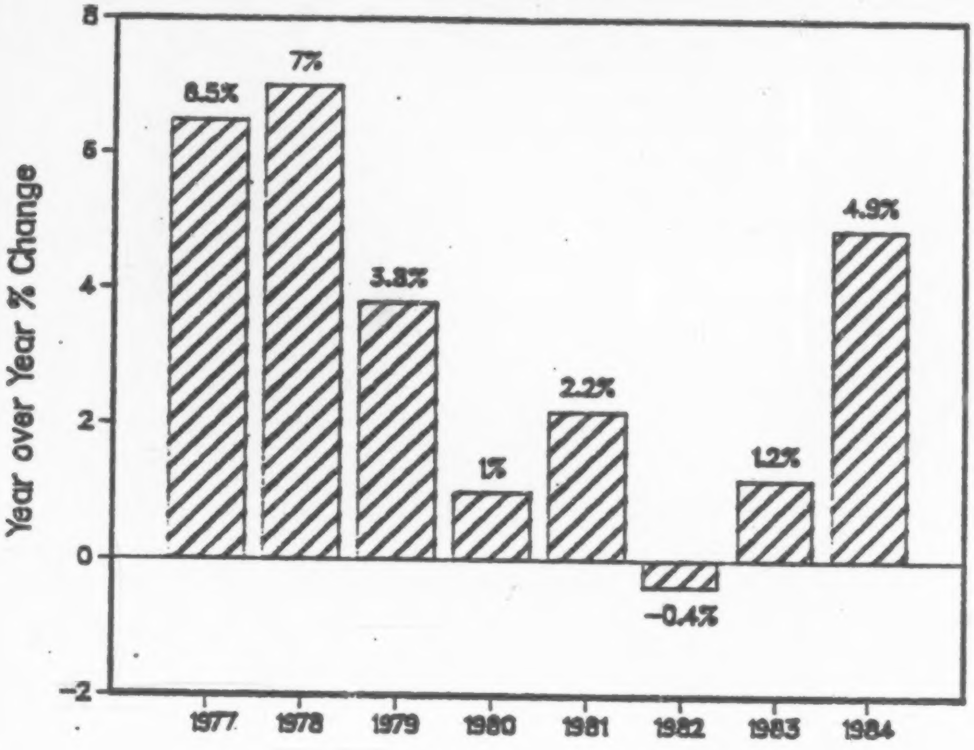
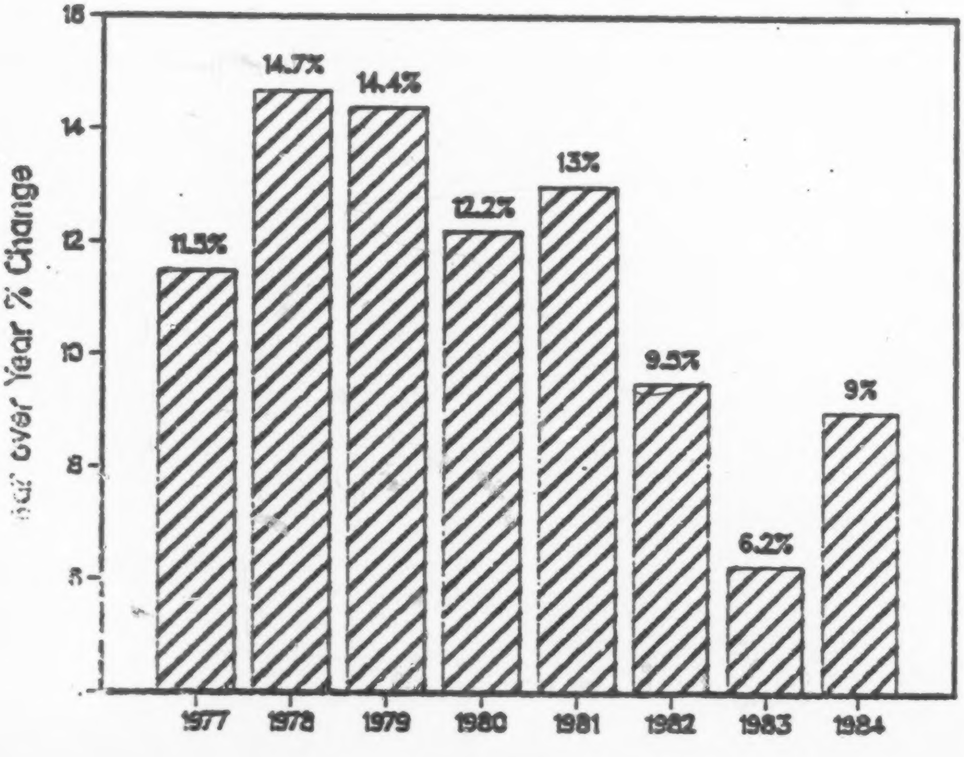


Table 8

NEW MEXICO NON-AGRICULTURAL EMPLOYMENT GROWTH RATES 1977–1984



NEW MEXICO PERSONAL INCOME GROWTH RATES 1977–1984



boom. In 1984 the New Mexico unemployment rate fell sharply to 7.5 percent, down from 10.1 percent of a year earlier. New Mexico personal income is estimated to have increased 9.0 percent in 1984, after an anemic 6.2 percent growth in 1983.

The New Mexico economic recovery was led by strong growth in services, retail trade, construction and manufacturing. (See Table 9). Services employment increased a strong 7.4 percent in 1984 led by expansion in tourism-related activities such as hotels, motels and skiing, with additional expansion in the health care industry. Many of New Mexico's existing hospitals have been forced to lay off staff in the face of declining patient loads. However, this effect has been offset by new health facilities such psychiatric hospitals, nursing homes and outpatient surgery centers.

Responding to lower interest rates, a boom in multi-family housing construction and a surge in new office building, particularly in the Albuquerque area, New Mexico construction employment increased 7.7 percent during 1984. In Albuquerque, construction employment rose a very sharp 16.8 percent in 1984, on top of a 13.1 percent increase in 1983. Multi-family housing units authorized in New Mexico last year increased 282.6 percent to 8,820 units, the highest level since the early 1970's (See Table 10). Single family housing units authorized showed no increase for all of 1984, but this came after a 53.6 percent increase in 1983. Finally, the dollar value of non-residential building permits in New Mexico rose 20 percent in 1984.

Table 9

NEW MEXICO NON-AG EMPLOYMENT
1984 GROWTH RATES BY SECTOR

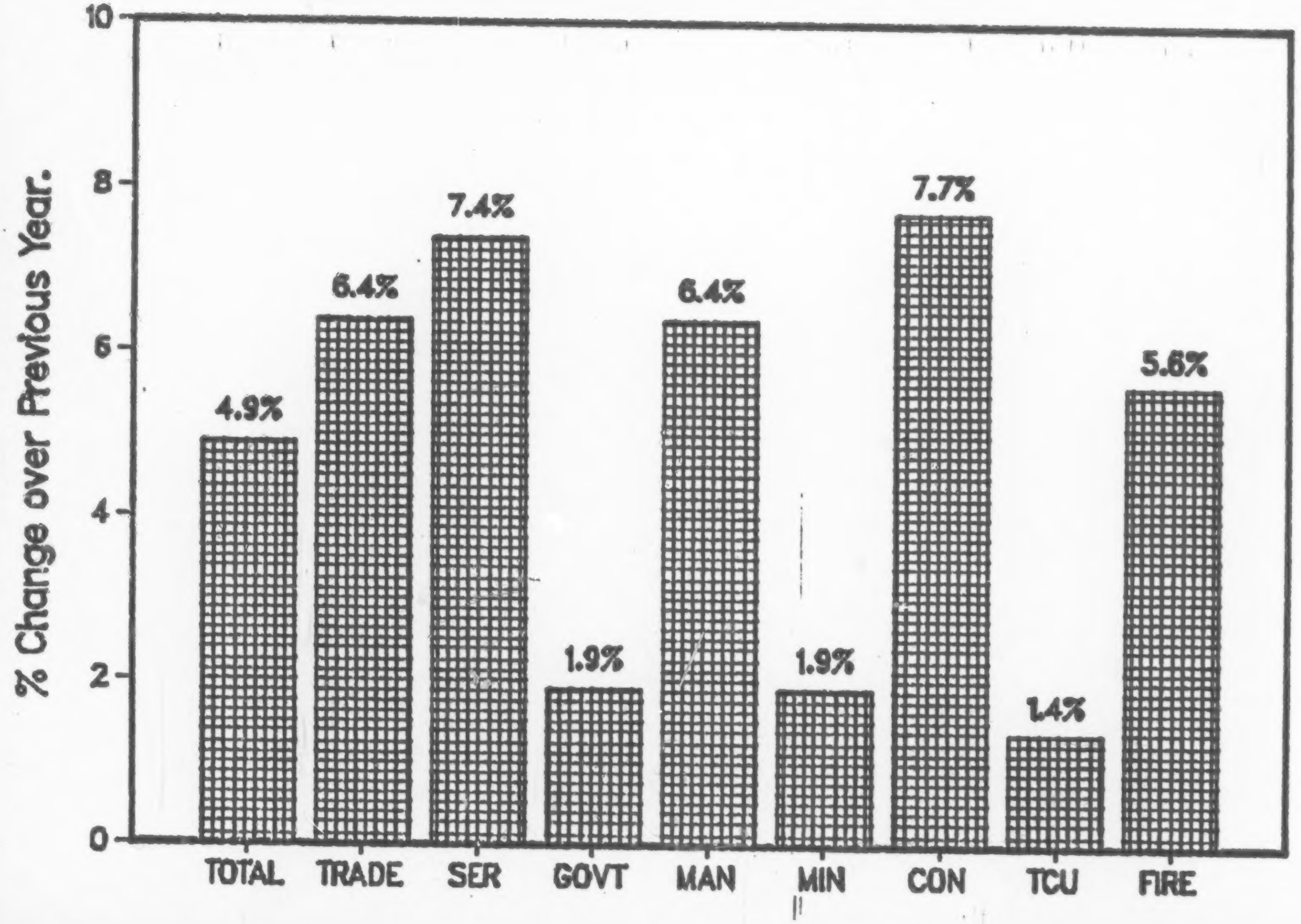
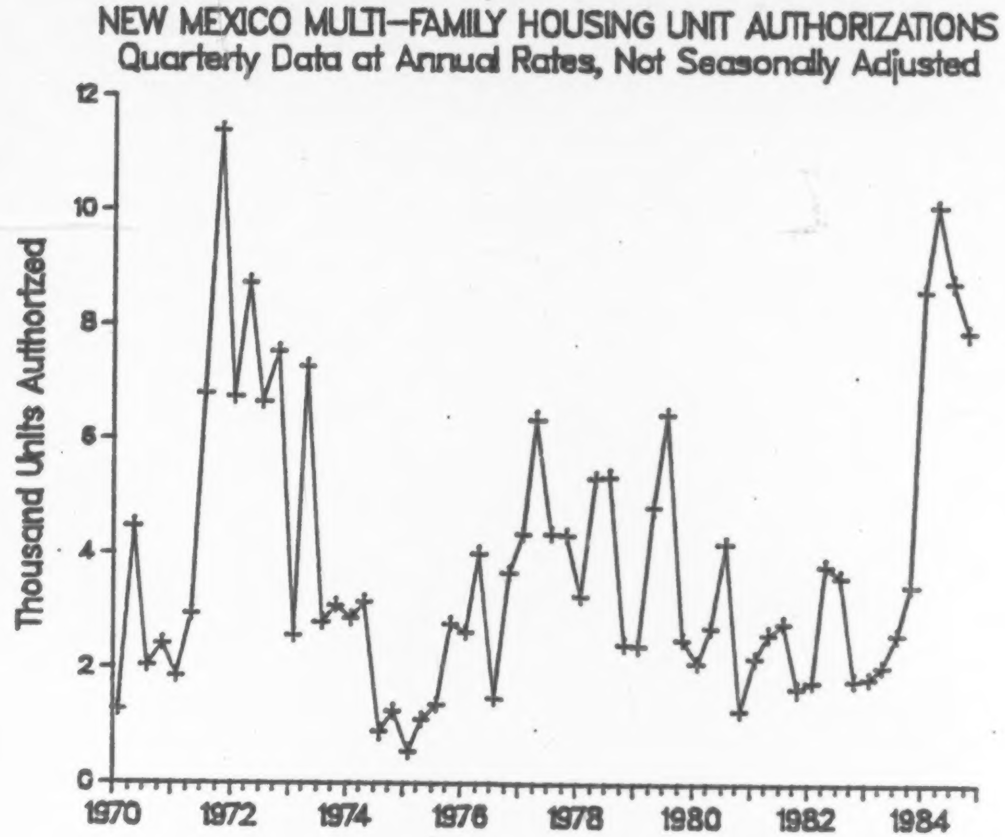
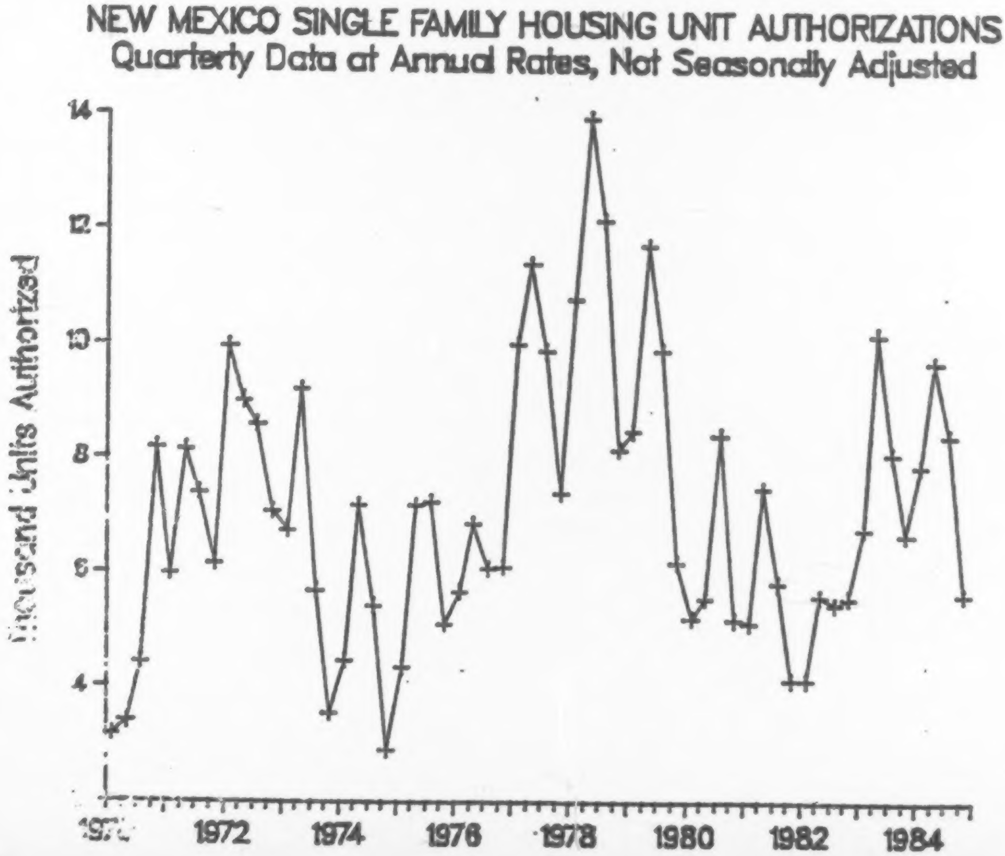


Table 10


NEW MEXICO MULTI-FAMILY HOUSING UNIT AUTHORIZATIONS
Quarterly Data at Annual Rates, Not Seasonally Adjusted
Thousand Units Authorized
0
2
4
6
8
10
12
1970
1972
1974
1976
1978
1980
1982
1984


NEW MEXICO SINGLE FAMILY HOUSING UNIT AUTHORIZATIONS
Quarterly Data at Annual Rates, Not Seasonally Adjusted
Thousand Units Authorized
4
6
8
10
12
14
1970
1972
1974
1976
1978
1980
1982
1984

Retail trade employment increased 7.1 percent during 1984, with strong gains both in Albuquerque and in New Mexico's smaller urban communities. There has been a flurry of retail expansion with new shopping malls opening in Albuquerque, Las Cruces, Santa Fe, Farmington, Ruidoso and Roswell. The state's growing population as well as strong increases in real disposable income have boosted the New Mexico retail trade sector.

The New Mexico manufacturing sector, which has languished since 1980, experienced a very welcome recovery during 1984. Manufacturing employment increased 6.4 percent in 1984, paced by a 6.8 percent increase in durable manufacturing and a 4.8 percent increase in nondurable manufacturing. The strongest employment gains were in electrical and electronic equipment reflecting the new hiring at Albuquerque's Intel, Signetics and Sperry Flight System's manufacturing facilities. As 1984 ended, the softness in the semi-conductor markets brought new hiring at Intel to a standstill and forced Signetics to lay off 50 people.

New Mexico's mining sector remains very weak. After losing a third of all mining jobs over the last two years, mining employment in New Mexico increased a slight 1.9 percent in 1984. The only bright spots were coal and oil production and exploration. As Table 11 indicates, coal production increased 20.3 percent in 1984 as the Lee Ranch coal mine opened to service Plains Electric's new coal-fired power plant and the York Canyon mine near Raton expanded to supply coal to Southwestern Public Service Company. Almost all of New Mexico's coal is used for coal-fired electricity at mine-mouth plants in the northwest corner of the state, serving both New Mexico and Arizona's power needs.

TABLE 11

NEW MEXICO ENERGY PRODUCTION
1971-1984

Year	Oil (1,000 bbl)	Natural Gas (mil. mcf)	Coal (mil. tons)	Uranium (tons)
1971	118,410	1,168	8.175	5,305
1972	110,525	1,216	8.248	5,464
1973	100,986	1,219	9.069	4,634
1974	98,695	1,245	9.392	4,951
1975	95,063	1,217	8.785	5,191
1976	92,129	1,231	9.760	6,059
1977	87,223	1,203	11.083	6,779
1978	83,365	1,174	12.632	8,539
1979	79,649	1,181	15.615	7,423
1980	75,324	1,150	19.297	7,751
1981	72,155	1,134	18.685	6,330
1982	71,024	991	19.940	3,954
1983	75,169	895	20.415	2,550
1984	78,127[1]	951[1]	24.567[1]	NA

NA Not Available

1 Based on percentage change over available months in 1984

Sources: Data before 1977, U.S. Department of Interior, Bureau of Mines. Annual Report.
Data after 1978, U.S. Department of Energy, Energy Information Administration, Selected Works.

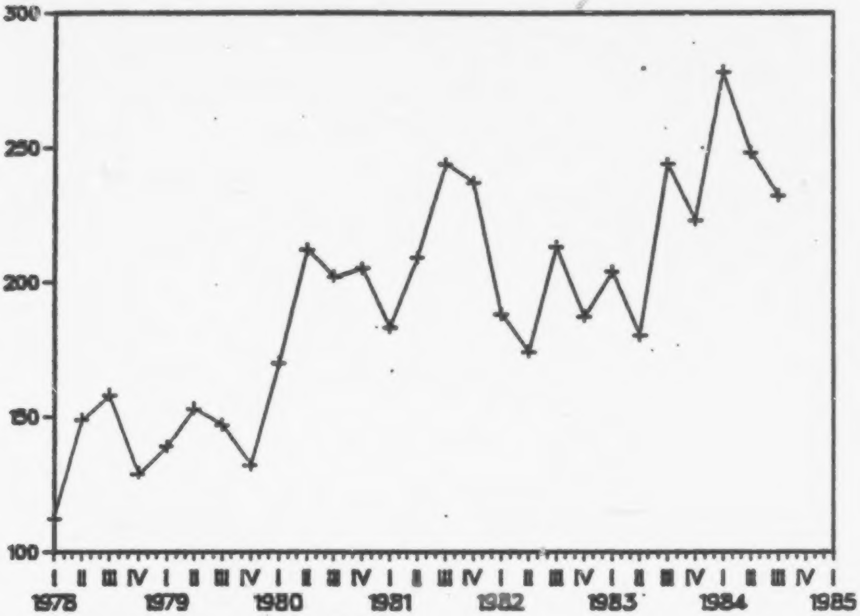
As Table 11 illustrates, Up until 1983 oil production within the state had been in a secular decline. Over the last two years, however, oil production in New Mexico has increased 10 percent. As indicated in Table 12, oil exploration activity has steadily increased since the late 1970's leading to discovery of new oil reserves within the state. For the future, nearby carbon dioxide fields in the Clayton, New Mexico area may be tapped to aid the tertiary recovery of oil from many of New Mexico's old oil fields in the Permian Basin.

Natural gas production, too, has been in secular decline in New Mexico, although with the national recession in 1981 this trend accelerated. Most of New Mexico's natural gas competes in the California market and there it faces stiff competition with Canadian gas as well as with hydroelectric power from the northwestern U.S. In 1984 New Mexico natural gas production rebounded a bit with a 6.25 percent increase. Natural gas exploration activity in New Mexico has declined very sharply from the peak levels of 1981 (See Table 12) as the so-called natural gas bubble and more realistic assessments of future natural gas prices have detered new exploration activity.

Where New Mexico used to be the nation's top uranium producing state, uranium production has all but ceased in New Mexico. Only one uranium mine and mill--Homestake Mining Co.--remains open employing few than 500 people in an industry that once employed 7,00 back in 1980. Copper production in New Mexico is depressed by low prices, stiff foreign competition and declining demand for copper in its traditional auto and housing

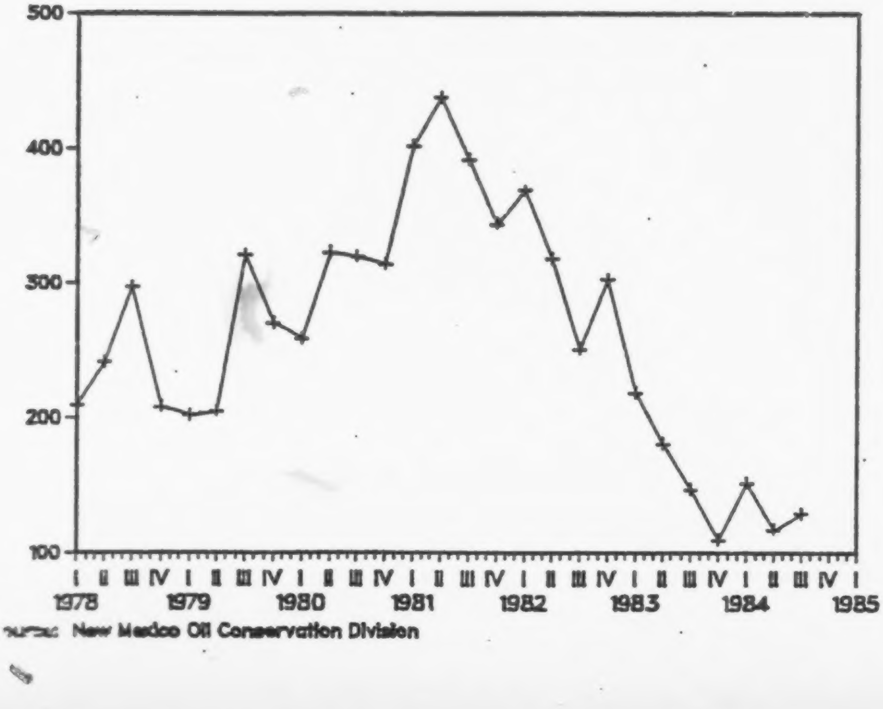
Table 12

NEW MEXICO OIL WELL COMPLETIONS
1978.1 – 1984.3



Source: New Mexico Oil Conservation Division

NEW MEXICO NATURAL GAS WELL COMPLETIONS
1978.1 – 1984.3



Source: New Mexico Oil Conservation Division markets. Potash production in New Mexico's southeastern corner near Carlsbad also remains depressed. Demand for potash--a fertilizer ingredient--fell in 1983 as farmers, responding to the federal payment-in-kind program, reduced cultivated acres. In 1984 potash faced stiff foreign competition due to the super dollar as well as low demand for fertilizer due to the weakened state of the domestic agricultural industry.

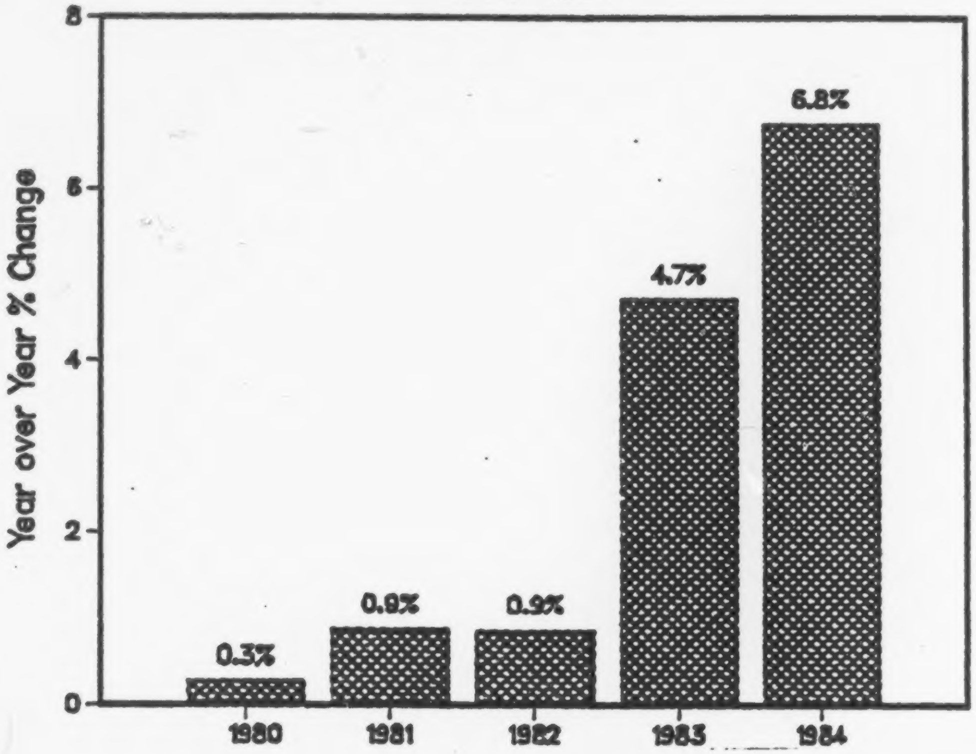
A modest 1.9 percent increase in New Mexico's large government sector kept the state's overall growth rate in 1984 more moderate. Federal hiring was constrained by the Reagan administration's efforts to control the growth of federal expenditures. And state government hiring was constrained by slow growth in New Mexico's traditional oil and natural gas revenue sources.

Over the last two years there has been a noticeable disparity in economic performance within New Mexico between the Albuquerque area and the areas outside of Albuquerque. As illustrated in Table 13, Albuquerque total nonagricultural employment increased 6.8 percent in 1984 after a solid 4.7 percent increase in 1983. In contrast, total nonagricultural employment increased only 3.7 percent in 1984 in areas outside of Albuquerque after a 1.0 percent decrease in both 1982 and 1983.

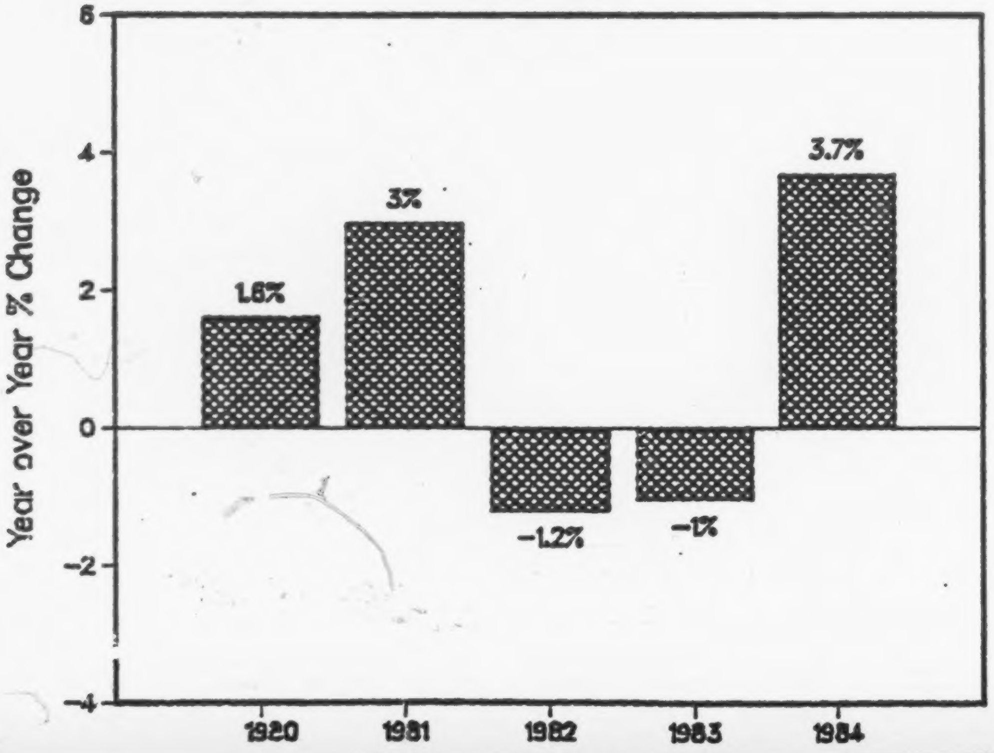
New Mexico mining activity is located principally outside of Albuquerque in the rural areas of the state, and the weakened state of the mining sector has taken its toll on these rural economies. Agriculture is also much more important to the economy outside of Albuquerque and its depressed condition also has been a drag on New Mexico's rural economy.

Table 13

ALBUQUERQUE MSA
TOTAL NON-AGRICULTURAL EMPLOYMENT GROWTH RATES
1980-1984



REST OF NEW MEXICO
TOTAL NON-AGRICULTURAL EMPLOYMENT GROWTH RATES
1980-1984



In contrast, Albuquerque has benefitted from increases in defense spending and the location of new electronics firms in the Albuquerque area since 1980. Sperry Flight Systems relocated to Albuquerque from Phoenix in 1982 and has hired 1,500 new workers. Sperry is principally a defense contractor producing avionic systems for a broad range of military aircraft. The Air Force Weapons Lab and Sandia National Laboratory--both located at Kirtland Air Force Base in Albuquerque--have expanded their activities associated with basic research for the so-called "Star Wars" defense program.

In the early 1980's both Intel and Signetics chose Albuquerque for the location of new plants. These plants were built and remained idle during the 1981-83 national recession. However, beginning in early 1984 both plants hired workers to meet the expanding demand for semi-conductors. Monolithic Memories has broken ground for a new wafer fabrication facility to be opened by late 1986. Monolithic Memories will join Intel and Signetics as well the existing firms of Digital Equipment and GTE Lenkurt in forming a blossoming electronics industrial base in the Albuquerque area.

THE 1985 NEW MEXICO ECONOMIC OUTLOOK

Forecasts for the New Mexico economy were determined by an econometric model developed and managed by the University of New Mexico's Bureau of Business and Economic Research. The model projections are part of the New Mexico economic forecasting service, entitled FOR-UNM, jointly supported by state government and private business in New Mexico. State economic activity is linked to national economic projections via the Data Recources, Inc.'s forecast of the U.S. economy. The state projections for 1985 are based on the January 26, 1985 national forecast from DRI.

DRI's economic outlook calls for sustained growth in 1985 with moderal inflation and low interest rates. Real GNP is expected to increase 3.3 percent in 1985, while the Consumer Price Index is projected to increase only 3.5 percent. Short-term interest rates remain stable in the first half of 1985 and then increase about 100 basis points in the second half. Long-term interest rates are projected to decline slightly throughout 1985, reflecting the favorable inflation outlook. In response to rising interest rates in the second half of 1985, DRI's outlook calls for somewhat slower economic growth as the economy leads into 1986.

Aggregate Forecast

The New Mexico economic recovery and expansion that began in 1984 is expected to continue at about the same pace in 1985. After increasing 4.94 percent in 1984, New Mexico total nonagricultural employment is projected to increase 3.99 percent in 1985, then slowing to a 3.00 percent pace in 1986. After increasing 9.02 percent in 1984, New Mexico personal income is projected to increase only 6.57 percent in 1985. The slower growth in nominal personal income reflects the projected

TABLE 14

NEW MEXICO AND ALBUQUERQUE MSA SHORT TERM ECONOMIC OUTLOOK

	History		Outlook	
	YEAR 1983	YEAR 1984	YEAR 1985	YEAR 1986
Personal Income (bil)				
New Mexico	13.5	14.7	15.7	16.8
% Change	6.25%	9.02%	6.57%	7.33%
Albuquerque	5.3	5.7	6.1	6.5
% Change	9.39%	7.28%	6.83%	7.33%
Total Non-AG Employment (thou)				
New Mexico	479.5	503.2	523.3	538.9
% Change	1.25%	4.94%	3.99%	3.00%
Albuquerque	195.0	208.2	216.2	221.8
% Change	4.73%	6.77%	3.82%	2.58%
Unemployment Rate				
New Mexico	10.1%	7.5%	7.6%	7.9%
Albuquerque	8.6%	6.2%	6.4%	6.8%
Civilian Labor Force (thou)				
New Mexico	609.00	629.00	667.18	695.40
% Change	2.18%	3.28%	6.07%	4.23%
Albuquerque	222.80	234.94	242.62	245.85
% Change	5.21%	5.45%	3.27%	1.33%

Personal Income is in billions
Civilian Labor Force and Employment is in thousands.

Source: Bureau of Business and Economic Research, University of New Mexico. FOR-UNM Forecast Service, February, 1985.
New Mexico Employment Security Department.
U.S. Bureau of Economic Analysis.

declines in wage rates and lower rates, which affect the growth of the large dividend, interest and rent component of personal income.

The New Mexico unemployment rate, which declined sharply to a 7.5 percent rate in 1984, is expected to increase slightly to 7.60 percent and again in 1986 to 7.9 percent. The declining unemployment rate in 1984 reflected both weak labor force growth as well as moderate employment increases. In 1985 and 1986 New Mexico labor force growth is expected to resume more normal growth rates so that labor force growth outstrips employment growth, resulting in a rising unemployment rate.

Sectoral Forecast

The New Mexico services sector is expected to be the leading sector in 1985. After a 7.42 percent increase in 1984, services employment is projected to increase 5.10 percent in 1985 and 3.26 in 1986. There is considerable evidence to support this optimistic outlook for the services sector, particularly in the areas outside of Albuquerque. Santa Fe and Las Cruces are adding new hotel/motel complexes and expanding others, with construction of health facilities, race tracks and defense-related construction occurring throughout the state.

Retail trade, which was a standout sector in 1984, is expected to experience good growth in 1985. After increasing 7.1 percent in 1984, New Mexico retail trade employment is expected to increase 3.68 percent in 1985 and then slow to a 1.93 percent

TABLE 15

NEW MEXICO
NONAGRICULTURAL EMPLOYMENT SECTOR
SHORT TERM ECONOMIC OUTLOOK

	History YEAR 1983	YEAR 1984	Outlook YEAR 1985	YEAR 1986
Total	479.5	503.2	523.3	538.9
%CHYA	1.25%	4.94%	3.99%	3.00%
Trade	110.7	117.8	122.1	124.4
%CHYA	2.22%	6.41%	3.68%	1.93%
Services	99.7	107.1	112.7	116.4
%CHYA	4.40%	7.42%	5.10%	3.26%
Government	127.2	129.6	133.8	137.1
%CHYA	1.27%	1.89%	3.27%	2.46%
Manufacturing	34.4	36.6	37.9	39.2
%CHYA	0.88%	6.39%	3.64%	3.47%
Mining	21	21.4	21.2	21.5
%CHYA	-20.15%	1.90%	-0.73%	1.50%
Construction	33.7	36.3	38.7	40.7
%CHYA	4.98%	7.71%	6.63%	5.24%
T.C.U	29.5	29.9	31.4	33.2
%CHYA	-1.33%	1.36%	4.98%	5.86%
F.I.R.E.	23.2	24.5	25.6	26.6
%CHYA	5.94%	5.60%	4.51%	3.78%

Source: Bureau of Business and Economic Research, University of New Mexico. FOR-UNM Forecast Service, February 1985.
New Mexico Employment Security Department.

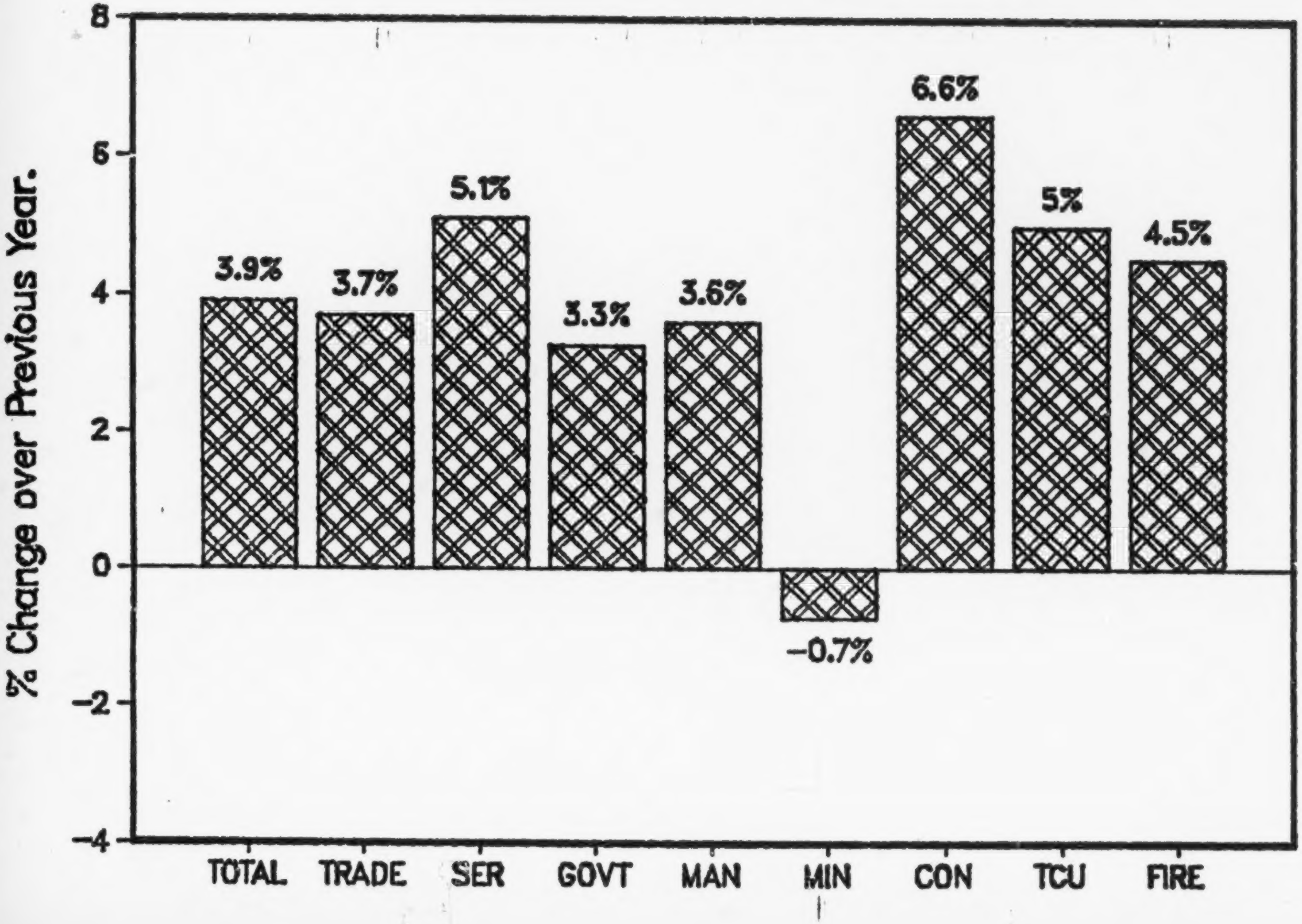
rate in 1985. Tax indexation will result in continued growth in real disposable income, a key variable for retail trade activity and consumer confidence is expected to remain favorable according to DRI.

Most of the expected growth in the large government sector is concentrated in the state and local government subsectors. After increasing 1.89 percent in 1984, total government employment is projected to increase 3.27 percent in 1985 and 2.46 percent in 1986. In 1985 federal government employment is projected at the same level as 1984 with a slight increase in 1986. State government employment is expected to increase as court mandates will force new hiring in the corrections and human services areas. Local governments in New Mexico are in good financial shape as many have now exercised new taxing authority granted by the State Legislature.

The forecast for the New Mexico mining sector is for continued weakness. After increasing 1.9 percent in 1984, total mining employment is projected to decrease 0.73 percent in 1985 and increase a slight 1.50 percent in 1986. Oil and gas employment is expected to be stronger in 1985 due to the recent strength of both oil and natural gas drilling, but then weaker in 1986 as lower energy prices finally deter oil exploration activity. The prospects for coal are improving with the announcement of construction of a new coal mine north of Farmington to be opened in early 1986 employing 150 workers. Kerr-McGee announced the shutdown of their uranium mine and mill near Grants affecting 475

Table 16

NEW MEXICO NON-AG EMPLOYMENT
1985 PROJECTED GROWTH RATES BY SECTOR



workers at the first of the year. Kerr-McGee also announced that it will close its potash mine near Carlsbad if a buyer is not found soon for this facility.

The forecast for New Mexico manufacturing sector calls for a somewhat slower 3.64 percent increase in 1985 after the strong 6.4 percent increase in 1984. At the beginning of 1985 slower manufacturing employment was already evident as Signetics in Albuquerque laid off 50 workers and Intel ceased new hiring. Both firms are waiting for the semi-conductor markets to work off excess inventory.

Construction activity is expected to continue strong in the first half of 1985 as a carry-over of the strong multi-family housing and office permit growth in 1984. However, by the last half of 1985 a market correction is expected in both the multi-family and office construction areas, particularly in Albuquerque. After increasing 7.7 percent in 1984, construction employment is expected to increase 6.6 percent in 1985.

In summary, the New Mexico economy during 1985 should experience another year of economic expansion at a pace slightly less than the state's economic performance in 1984. Economic growth will begin to slow in late 1985 and 1986 as lower anticipated growth in real disposable income slows the growth of the state's large retail trade and services sectors. Given a continuation of economic expansion at the national level, New Mexico's manufacturing sector should see some modest expansion in 1985 and 1986. The New Mexico mining sector will falter briefly in 1985, as the uranium and potash closings and lower oil and gas exploration activity, responding to declining energy prices will limit growth.